1
Ex892C

CONFERENCE REPORT ON

Extension Experiences Around the World

Washington, D. C.
May 16–20, 1949

UNITED STATES DEPARTMENT OF AGRICULTURE
EXTENSION SERVICE AND
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
1951

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY

BOOK NUMBER 1
Ex892C
799841

CONFERENCE REPORT ON

Extension Experiences Around the World

Washington, D. C.
May 16–20, 1949

LIBRARY
RECEIVED
MAY 1 8 1951
U. S. DEPT. OF AGRICULTURE

UNITED STATES DEPARTMENT OF AGRICULTURE
EXTENSION SERVICE AND
OFFICE OF FOREIGN AGRICULTURAL RELATIONS
1951

CONTENTS

Page
Foreword — III
Addresses — 1
  Address of welcome — 1
  Scope and objectives of the conference — 2
  The interest of the United States Department of Agriculture in the conference — 4
  Essential steps in national agricultural development — 6
  World-wide need for extension — 7
  Extension work in Germany — 8
  Understanding people of other lands — 9
  The cultural approach to agricultural world extension in relation to economic development — 15
Area committee reports — 20
  The Middle East — 20
  Eastern Asia — 35
  Southeastern Asia and India — 59
  Africa — 79
  The Balkans — 90
  Southwestern Europe — 101
  Central and Northwestern Europe — 102
  Canada, Australia, and New Zealand — 109
  Latin America — 121
Miscellaneous committee reports — 171
  Extension by private agencies — 171
  The social sciences in relation to extension work — 177
  Coordination and effective utilization of all welfare and educational agencies working with rural people — 192
  Training needs — 196
Summary of the conference — 200
Literature cited — 208

Washington, D. C. Issued April 1951

Foreword

In 1944, the Extension Service and the Office of Foreign Agricultural Relations of the United States Department of Agriculture called a conference for the purpose of outlining the contribution extension methods and techniques might make toward the rehabilitation of war-torn countries. A report of the conference was issued (*9*).[1]

In 1949, the two agencies that sponsored the 1944 extension conference again joined in issuing invitations to a second conference on extension. The 1949 extension conference, which was held May 16 to 20, 1949, had as its purpose to outline extension experiences around the world. Specifically, the conference was called to (1) outline systematically either the problems the various countries of the world have, or the problems they seem likely to ask our help in solving through an extension approach; (2) appraise the recent experiences the countries have had in extension and related educational fields; and (3) within the framework of the countries' cultures, suggest the kind of extension approaches that seem appropriate to given types of problems.

Procedure

The conference was organized around nine areas, with a committee for each: The Committee for—

1. The Middle East.
2. Eastern Asia.
3. Southeastern Asia and India.
4. Africa.
5. The Balkans.
6. Southwestern Europe.
7. Central and Northwestern Europe.
8. Canada, Australia, and New Zealand.
9. Latin America.

In addition to the area committees, the following four special committees were organized:

1. The Committee on Extension by Private Agencies.
2. The Committee on the Social Sciences in Relation to Extension Work.
3. The Committee on Coordination and Effective Utilization of All Welfare and Educational Agencies Working With Rural People.
4. The Committee on Training Needs.

---

[1] Reference is made in parentheses to literature cited, p. 208.

Attendance

Invitations to the conference were extended to (1) technicians who were familiar personally with extension work in the regions concerned and who had worked as committee members on various regional committees set up prior to the assembling of the conference; and (2) other technicians personally familiar with conditions in the regions who, it was felt, might have a contribution to make to the conference. All persons were invited in their capacity as private individuals and not as representatives of any agency, group, or country.

The conference consisted of both general sessions and meetings of the regional working committees, which during the sessions were expanded to include some out-of-town membership. A large number of interested persons attended the general sessions. Of this number, about 150 participated actively in the work of the regional working committees.

This was an informal fact-gathering conference carried on according to thoroughly democratic methods. The committees were instructed to follow a general outline for presenting their reports and were assured that their findings would be issued without change. Therefore, the committee reports included in this conference report contain the findings of the committees and do not necessarily represent the views or policies of the United States Department of Agriculture, of any other agency of the United States, or of other governments.

The conference Steering Committee was made up of the following members:

Douglas Ensminger, Extension Service, Chairman.
Clayton E. Whipple, Office of Foreign Agricultural Relations, Cochairman.
Edward W. Aiton, Extension Service.
Florence L. Hall, Extension Service.
John V. Hepler, Office of Foreign Agricultural Relations.
Samuel P. Lyle, Extension Service.
Lester A. Schlup, Extension Service.

Douglas Ensminger,
Extension Service, Chairman.
Clayton E. Whipple,
Office of Foreign Agricultural Relations, Cochairman,
Conference Over-all Committee.

799841

Conference Report on Extension Experiences Around the World

Washington, D. C., May 16–20, 1949

Issued by the Extension Service and the Office of Foreign Agricultural Relations, United States Department of Agriculture

ADDRESSES

Address of Welcome

By

William A. Minor

Assistant to the Secretary of Agriculture

I am glad to represent the Secretary on this occasion and in his behalf to say that we feel this conference on extension experiences around the world is very timely. In recent years the agricultural leaders from most countries of the world have visited us to learn about our know how in getting scientific information extended and applied on the farms and in the homes.

We have noted that the missions from this country to various areas of the world have almost universally recognized that the ability of a country to act upon recommendations has been dependent upon the existence of an extension service or some related educational system that worked directly with farm people.

In recent months, much discussion has been centered on the President's Point 4 Program to extend technology and the benefits of science for improvement of underdeveloped areas of the world. This conference, therefore, would seem to be an early effort toward the implementation of the President's hope for other countries to receive the benefits of technology. During this week you will be analyzing experiences in different parts of the world to improve farm production and homemaking practices that will ultimately lead toward a higher and more secure level of farm-family living.

I, personally, want to say that we in the United States Department of Agriculture feel highly honored to have two of our agencies give leadership to this important conference. We are further honored to have such distinguished and busy people join with us in informal discussions of extension experiences around the world. I hope we all will find it a profitable conference.

Scope and Objectives of the Conference

By M. L. Wilson

Director of Extension Work

This is a changing world, and the changes that are taking place are affecting not only the people of the large industrial areas, but also the great masses of rural people the world over. Hand in hand with the great increase of scientific knowledge in all phases of agriculture and agricultural production is the world-wide urge for a better life and rising standards of living for the people who live on the land. Because there is an inseparable bond between the people who live on the land and the democratic way of life, we feel that the latter is particularly important in view of the contest now taking place in the world between totalitarian ideologies and democratic ideals.

Education has a great part to play in the development of a more secure and stable rural-life program for the world. One of the important objectives of this conference is to consider what educational forces can be used in other cultures of the world, and how used, to meet this desire of the people for rising standards of living so that they, too, may have an opportunity to participate in a democractic way of life. That this objective might be attained, invitations were extended to representatives of various organizations such as the Food and Agriculture Organization of the United Nations, a number of Federal agencies, private institutions, and professional agricultural people who have had experience in agricultural educational activities throughout the world.

No doubt many of you remember that during the period September 19 to 22, 1944, the Federal Extension Service and the Office of Foreign Agricultural Relations of the United States Department of Agriculture sponsored a similar conference to bring together people interested in extension work to consider what extension educational methods and techniques could offer in helping to rehabilitate a war-torn world. As a result of that conference, a report was issued by the Department of Agriculture (*9*) and a volume was also published by Columbia University (*1*). We found that effort was very much worth while, for it was a primary step in our own education.

Since the 1944 conference, the Food and Agriculture Organization has been organized, having as its objective the improvement of agricultural conditions throughout the world. It is giving special attention to increasing the food supply so that people may be better fed. The objective of an improved agriculture and the application of science and organization of educational skill to bring this improvement about is in terms of rising standards of living and increased security for the human race. Many professional people in the field of agriculture have gone to all parts of the world with the United Nations Relief and Rehabilitation Administration, FAO, and other organizations. Missions have been sent to many foreign countries to appraise agricultural problems and make recommendations as to ways and means of improving conditions.

Practically all commissions have reported to the effect that agricultural education that will reach the great mass of the people is a "must," and that at least the fundamentals should be encouraged in those countries not yet taking advantage of the trends toward general improvement. The work of agricultural missionaries who have made important and valuable contributions throughout the world has emphasized that the spiritual being of man is interrelated with the well-being of man. The lesson we may draw from this work is that spiritual ideals, science, and human welfare are so closely linked together that they must be developed in a coordinated way among the people.

Even as the sciences of agricultural production have promoted great educational progress in the proper management of the soil and control of insects and plant diseases, so recent experience brings to light the contributions that the social sciences have made toward educational processes among the people. Rural sociology, anthropology, and psychology have made such great strides in the last decade that we hope during this conference to draw upon the developments in the field of basic social sciences. We hope, too, that we may gain a better insight into the learning processes of people, processes that are not contingent solely upon the ability to read and write. We are, therefore, gratified that a number of the social scientists in the universities and agricultural colleges who have been working in this field will be with us this week to give us the benefit of their knowledge. We may say, then, that another of the important objectives of this conference is educating us in the United States to understand better what world problems are, so that when we are called upon to render assistance, we shall be better equipped to do so.

Perhaps, too, we can at this time bring into sharper relief what is meant by extension education. Generally, we think of extension education as informal education in contrast to the more formal education taught in the schools and colleges. This does not mean that the two systems of education are in competition with each other. On the contrary, the two exist in most societies and operate so as to complement each other.

When we, then, refer to extension, we have in mind an informal education that is based upon two principles. One is to help people discover what their problems are, and the other, after the nature of the problems is determined, is to assist the people in finding ways in which changes may be brought about to improve conditions.

For a number of years, students have come to the United States from all corners of the world to learn about our extension work. In the process of teaching them, we have come to the realization that we have much to learn about the development of extension work in other countries. We have learned, too, that to superimpose the system of extension service such as we have in the United States upon other cultures is neither wise nor desirable. In our work with these foreign students, therefore, we are placing emphasis upon extension principles, methods, and techniques, rather than upon our extension system of organization. Our role should be that of assisting other countries to develop and grow, and we should stand ready to render whatever technical assistance we may be called upon to give.

I feel, therefore, that this very informal conference will provide a wonderful opportunity for free and complete exchange of ideas and experiences. Its results, I am certain, will go a long way toward making all of us better informed about the present development of extension around the world and helping us to visualize more clearly the kind of assistance the various countries may be requesting in their efforts to expand extension work further.

In closing, I shall quote what President Truman said in an address before FAO last November. "We have found our Agricultural Extension Service essential to a high level of farm production in our own country. Through our extension service we make sure that our farmers learn about the latest advances in production and techniques. This means furnishing practical information and help right on the farm. I know FAO is already interested in an extension service, but I wish to emphasize that the United States stands ready to help in developing such systems in other countries." [2]

The Interest of the United States Department of Agriculture in the Conference

By **Fred J. Rossiter**, *Associate Director*
Office of Foreign Agricultural Relations

Some of you who are attending this conference also attended the 1944 conference held by the Extension Service and the Office of Foreign Agricultural Relations (*9*). The emphasis at that time was given to the study of the cultural understanding, cultural bases, and cultural situation of foreign countries in order that workers in the States would be able to know something about the country in which they were going to work. Many people of the United Nations Relief and Rehabilitation Administration participated in that conference, as they were expected to go out to the various war-torn countries. Since then, many folk have had valuable experience in visiting these countries. A great number of UNRRA people are back in Washington, D. C., and some are with us today. Moreover, many Army people have had experience in Europe and Asia studying agricultural rehabilitation problems and have gained some valuable knowledge. Missions also have been sent abroad to study agricultural problems. Today we should, therefore, be in a much better position to understand the problems of some of these countries.

Most of you are acquainted with Point 4 in President Truman's inaugural speech, which was made in January. You will probably recall that he talked then about the bold program for the United States to aid the undeveloped countries through our technical assistance so that they may develop and increase their standard of living. The State Department sent a questionnaire, concerning how our country might be able to render assistance, to our ambassadors and ministers in about 44 countries of the world. Of the reports received, at least 9 out of 10 emphasized the need for agricultural improvement and development, and many of them, about 4 out of 5, had agriculture at the top of the list. Hence American officials living abroad appreciate that agriculture has something that can help these other countries. None of you, I think, questions the fact that agricultural education or extension is an important phase of the assistance experts can give to the people of these countries.

---

[2] An address delivered before the Fourth Session of the Food and Agriculture Organization of the United Nations on November 24, 1948, Washington, D. C.

I have had 12 years of experience in living abroad and an opportunity to travel in several countries. I found an agricultural experiment station in every country I visited, no matter what the stage of development in that country was. I found in some places that the leaders were and still are enthusiastic; in others, they may lack enthusiasm. But I feel that in too many areas something is lacking in the process of getting experiment-station information to the people in such a way that they will know what the station is doing.

The Department of Agriculture appreciates having in attendance at this conference you people from State institutions and private agencies, as well as you representatives of foreign countries who are located here in Washington, D. C. We know that you can contribute a great deal to this conference. You have experiences and ideas that are different from the experiences and ideas of those of us who are spending most of our time in Washington.

The Office of Foreign Agricultural Relations is particularly interested in this conference, as we find that we continually need more information and are constantly looking for it. We find it our responsibility to help to orient the many technical experts who are going abroad. We need to furnish these experts with all the information available. Generally, those not oriented before going to the field are not so successful as those who spend time in learning about the conditions of the country to which they are assigned. Too often those who do not have time to learn about conditions before they depart try to transplant the "revolutionary" ideas and programs of this country, and they soon become dissatisfied when the people of other countries do not understand or accept their ideas.

Last evening I came across a report from one of our agricultural attachés located in a foreign country. The report told about an American extension specialist who had been in that country for a year and who had come there with all the latest American extension ideas. The top officials in this country were greatly interested in extension and agricultural education and were willing to pay large sums of money for it. But this man, who had been in the country just a year, was on his way home, discouraged. Why? Because he could not find enough people at the level on which he was working interested in extension. I am bringing this out to illustrate that agricultural education in a foreign country cannot be accomplished overnight, but is a long process. It is important to approach a number of these enterprises in a constructive way; that is, for us to learn what the problems in a particular country are, and then to find out how many people are willing to work with you. I am sure we have much to learn about agricultural extension in other countries, and I can think of no better way to start learning than to pool our thoughts, experiences, and suggestions, as we shall do during our meetings this week.

Essential Steps in National Agricultural Development[3]

By RALPH W. PHILLIPS, *Agriculture Division*

Food and Agriculture Organization of the United Nations

In the less developed countries throughout the world there is a growing interest in and hope for a rapid national economic progress, for which agricultural improvement is increasingly realized to be essential. Efforts to achieve agricultural improvement, however, have not always been well directed. There has been, for example, too much of a tendency to depend upon superficial and material additions to a country's economy, as opposed to the more basic educational improvements. It therefore seems useful to outline, for the benefit of interested leaders, some of the principles underlying improvement and the means for bringing it about, based on general experience in many lands.

Real progress consists of an increase in agricultural production per person on the land. This leads to improved nutrition among rural people, more products for sale to city people, and more and better manufactured goods for use in farm living and production. These, in turn, lead to a further increase in production per person on farms. Improvement, once started, tends to continue indefinitely. There is no end-point in agricultural development.

To give agricultural improvement a chance to start, it may be necessary first of all to remove certain obstacles. These vary from country to country, but some common ones may be mentioned. Exorbitant taxes, unjust rents, political instability, insecurity of property, or instability of tenure may deprive the farmers of any incentive to produce more than they need for their own use. Fragmentation of holdings may also be a limiting factor.

All farmers have a natural urge to make a better living for themselves and their families. When obstacles to the expression of this urge have been removed, better education of farm people for farming and living is the key to sustained national progress. Farm children need systematic elementary education. Agricultural extension work brings to farmers, farm women, and farm boys and girls a knowledge of scientific farm-and-home practices. Institutions for research on agricultural problems and for training agricultural experts are needed. Up-to-date information on agriculture must be collected and made public. Some agricultural affairs require government regulation.

For highest success, agricultural research workers, teachers, extension workers, and others assisting in agricultural improvement must have a spirit of service to the common people. Where farmers' sons and daughters are educated and are trained to serve in these capacities, intelligent and sympathetic treatment of agricultural problems is assured. A scientific understanding of agriculture on the part of the farmers is the basic essential for national agricultural improvement. To the extent that this is achieved, and only to that extent, will a nation be able to make effective use of improved machinery, fertilizers, seeds, and other equipment and materials obtained either at home or abroad, or of its own land and water resources.

---

[3] Summary of Mr. Phillips' talk.

World-Wide Need for Extension

By Norris E. Dodd, *Director General,*
Food and Agriculture Organization

Effective educational advisory service constitutes an absolute requisite to the improvement of the welfare of workers on the world's farms and in its forests and fisheries, and of consumers everywhere in need of the products of the soil and seas.

In the first report of the Interim Commission of FAO back in 1944, the then future organization was advised to be prepared to assist governments to develop extension services, to promote the training of extension workers, and to assist in the widening of the usefulness of such services.

The world's knowledge and skills have not been organized in such a way as to bring them fully to bear on the problem of stepped-up food production. This knowledge and these skills, if put to full use, are sufficient to meet the world's food problems.

My first-hand visits with agricultural leaders around the world convince me that the nations are alert to the need for greater food production but they are handicapped by not having a sufficient number of competent technicians who know how to spread the knowledge of modern agricultural practices among their farmers.

More than half the people of the world go to bed hungry every night. This need not be so, for if the known methods of improved agricultural production and nutritional practices were widely adopted, food production could be greatly increased and family levels of living materially raised.

To many people, the answer to a country's problems is to send to it a corps of technicians. Experience in this connection shows that the technician is of little use unless the country has the organizational mechanism for getting the recommendations of the technician widely disseminated and interpreted to the people in such a way that they can see why it is important to do something. They must also be given help in making the necessary changes in farm and home practices. Basic to the development of any program of helping to improve farm and home production and living conditions is the development of an extension educational program.

The carrying of extension education to the masses of the people of the world is a challenge facing all of us interested in peace and improved levels of living for the world's farmers.

Extension Work in Germany[4]

By I. O. Schaub

Director of the North Carolina Extension Service[5]

Customs and traditions must be taken into consideration in suggesting an extension program in any country. This is particularly true where farming operations have been carried on for a hundred years or more. Much of western Germany has been farmed for a long time, but the average yields of crops produced are higher than yields of similar crops grown in the United States. This indicates that the practices followed in western Germany have been good, but there is still plenty of opportunity for improvement.

Most of the farmers of central and south Germany live in villages, and their farming lands extend out for a radius of 1 or more miles. This is chiefly because of inheritance laws that have come down through several generations. Farming lands have been subdivided into small plats or strips. A 5-acre farm may be divided into 5 to 20 different parcels in all directions from the village or residence. With the fields subdivided into such small areas, mechanization of the farm, such as we have in the United States, is almost impossible. The Germans fully realize the necessity for consolidation of their land, but they find it extremely difficult to get everyone concerned to agree on such consolidation. Many Germans have expressed the opinion that consolidation could be brought about only by legal compulsion.

The German farmer almost worships the soil. He saves all manure, both liquid and solid, which he applies to his land; he also uses every means to increase the humus in the soil by rotation of his crops and the turning under of grass and legumes. One sees little evidence of erosion. The soils are so full of organic matter and the rains are so gentle—more so than in the United States—that erosion is not so large a problem as it is in our country. During my entire 3-month stay in Germany, I did not see a single stream colored from field erosion.

Under present conditions more than half of the horsepower on the farms in Hesse comes from use of the milk cow. Many Americans are prone to criticize the Germans for such a practice. However, the German farmer feels that he needs four things—manure, some milk, some meat, and horsepower. With his small acreage of land, he cannot maintain both a team and a milk cow. By force of necessity, therefore, he uses his milk cows for draft purposes. Though he may not get so much milk as he would if he did not use his cow as a draft animal, he does get some milk. She will give him some meat, and, above all, she will give him a supply of manure.

In most of Germany we find an advisory or extension system. Naturally, that country is working under many handicaps. There is not a close tie-up between the county advisers and the research workers in universities. Efforts are being made, however, to bridge this gap. Local advisers are severely handicapped because of lack of transportation and have to depend primarily on walking and on riding bicycles. Probably one of the greatest contributions we in the United States can make to the development of an adequate extension service in Germany is to acquaint her with our technique of doing the job. An exchange of personnel between the two countries would be of great help. If it were possible to send over a few German-speaking county and home agents to work with advisers now employed in Germany, much improvement in their procedure would undoubtedly result.

---

[4] Slides were used in connection with this talk.
[5] Now retired.

Understanding People of Other Lands

By Edward A. Kennard

Foreign Service Institute, United States Department of State

Universal Human Characteristics

All the various modern races of man are of one species. Despite the differences in physical appearances such as skin color, hair form, shape of the nose, and stature, all modern races of the world must be assumed to have the same needs and potentialities in the absence of proof to the contrary.

Basic biological needs for food, sexual satisfaction, and avoidance of pain, are universal.

Basic psychological needs of emotional response from others and of security of the long-term kind, and for novelty of experience also seem to be universal.

All human behavior can be analyzed into rational and nonrational components, but because of the large part that emotional response plays in human behavior it is more convenient to regard it as culturally standardized unreason.

All human groups anywhere on the face of the earth today are organized societies that meet all the basic universal biological and psychological needs.

Theories Devised To Explain the Great Differences in the Behavior of Different Populations

It has often been argued that geography and climate determine the behavior of populations. However, if all the observed differences in human behavior were explicable solely in terms of geography and climate, there would not be differences between the Hopi and Navajo in the Southwest, or in the behavior of Europeans 100 years ago and Europeans today. However, geography is a very important limiting factor, in the sense that agriculture cannot develop in an arctic environment or metallurgy in an environment devoid of metallic ores. In a sense, a people's culture also limits their exploitation of their geographic environment, since they utilize only those parts of their total environment that they have knowledge and techniques for exploiting.

The biological theory.—If it were true that peoples differed in behavior because they inherited in the germ plasm different ways of acting from their ancestors, the history of the United States would be different from what it is. Peoples whose ancestors have come from all parts of Europe, the Orient, and Africa today share common modes of behavior with one another as Americans that differ from the behavior of descendants of the same ancestors who did not emigrate.

The economic theory.—The abstraction of the "economic man" is of limited and doubtful utility at best. All the other social and psychological factors that condition man's behavior even in what are usually regarded as purely "economic" activities are ignored. The theory assumes a single set of motivations, where we are actually dealing with a complex.

The political theory.—Political man, like economic man, is an abstraction of convenience, and useful only to the extent that one can successfully isolate certain segments of behavior from the total context of the daily life of organized human groups.

Contemporary social scientists avoid any single factor analysis and rather try to account for all these factors in describing and analyzing human behavior.

The Concept of Culture

The term "culture" is used by social scientists to refer to the totality of the behavior of any particular group of people, whether they be tribes, villages, or nation states. It is equivalent to the ordinary meaning of civilization in its broadest sense, or what is meant by a way of life.

Technically, culture is defined as the configuration of learned behavior and results of behavior whose component elements are shared and transmitted by members of a particular society.

The great problem in international relations and in everyday dealing with foreign people is that most of us tend to identify our traditional ways of meeting problems, of organizing life, and of reacting to situations as "human nature," whereas all of it is learned. Other peoples have developed different solutions to the same universal problems, and consequently, have different human natures.

Every culture is ethnocentric. This term refers to the fact that each people tends to regard its own particular culture as either the best or the only proper solution, and to think of all others as either quaint, queer, or "cussed."

There is no psychological scale against which to evaluate the different cultures of the world. Each culture may be satisfactory to the members of the society that embodies its traditions. Consequently, problems must be seen from the point of view of the individual of the other nation, as well as in terms of American assumptions and American solutions. It may well be that different courses of action from those we are accustomed to may be reconciled with those we traditionally follow.

The Human Personality

Every human being is born into a society that is a going concern, and he is, from the moment of birth, conditioned (taught) to behave in accordance with the standards of that society.

The biological nature of the human infant is plastic. Consequently, each child learns in the process of growing up to conform to the standards of his group in terms of his age, sex, and status.

Habits on the individual level correspond to customs on the social level, and, to the extent that individuals have shared similar early experiences, they will manifest similar personality patterns.

Habits and habit systems in each individual are established by differential reward and punishment, usually meted out by parents.

To the extent that patterns of child rearing and other experiences are different from culture to culture, there will be corresponding differences in their adult character structures.

Habits established early in the individual's life influence all subsequent learning. Patterns of deference to those of superior status, or obedience to those in authority established in relationship to parents, brothers, and sisters, will tend to be transferred to other members of the society in terms of their superordinate or subordinate status.

Culture affects the personality of the individual in two distinct ways: (1) Through the culturally patterned behavior of individuals toward the child, and (2) through his observation of the modes of behavior established in his society, and his instruction in them.

Since all social behavior, including the policies of great nations, is ultimately the behavior of human beings—sometimes millions of them—in the situations in which they are placed, the understanding of individual motivation in different cultural milieu is fundamental.

Similar things and similar motives have different meanings in the context of different cultures. These meanings become intelligible in the light of cultural symbols, sometimes referred to as national characteristics.

Some Common American Assumptions, Characteristic of Contemporary American Culture Patterns

Utility.—Americans are a practical people, and they characteristically tend to judge a policy or a plan by the practical results that will be achieved and regard this as perfectly natural. But acts that are practical and useful to us may well seem arbitrary and unreasonable to peoples who have not been shaped by our cultural tradition. The utility of behavior is a question that may well never occur to other people.

Egalitarianism.—The idea of the equality of men is one of the most firmly grounded and longest established traditions of the American people. It not only is explicitly stated in our most treasured historic documents, but it pervades all aspects of daily life. The tendency quickly to get on a first-name basis in both business and social life, the informality of social life, and the discomfort that both officers and enlisted men felt in the heirarchy of the Army and Navy during the last war are all evidences of this basic assumption.

Competition.—Americans are firmly convinced that all achievement is best furthered by competition. It is assumed to be the essential ingredient in all our national growth—"what has made this country great," and the basis of the "free enterprise system." We actually compete from the cradle to the grave—within the family, in school, on the playground, in business, social life ("keeping up with the Joneses," but preferably getting ahead of them) and in government. Psychological tests show that most Americans do their best work in a competitive situation. But the Japanese, who avoid competition, and whose life is arranged on a hierarchical basis so that there can be no competition. fall off in performance when placed in a competitive situation. This assumption blinds most Americans to the needless waste and duplication that occurs in American organizations and the effects it has had in the exploitation of the country's natural resources.

Distrust of authority.—This fundamental American attitude is institutionalized politically in our Government of "checks and balances," which is correlated with the assumption that all government is a necessary evil and its activities should be kept to a minimum. However, its implications are much more far-reaching than that, since children resent the authority of parents, pupils of teachers, workers of bosses, and citizens of government. An ordinary policeman—the prime symbol of properly constituted authority—is usually felt by the ordinary citizen to be an individual "who is looking for a chance to push me around." Americans do not identify themselves with those individuals who hold positions of authority and power in our social organizations. Consequently, the words "politician," "bureaucrat," "boss," all have unfavorable connotations when spoken by an American that they do not necessarily have when used by people of other countries.

Status must be validated in each generation.—Americans with their assumption that all men are equal, and that each man competes to achieve success in each and every walk of life, have no room in their system for hereditary status. In many countries both in Europe and the Orient one's position is determined for life at birth, whether one chooses to do anything about it or not. But in the United States, it does not matter whether one is named Lodge, Saltonstall, Roosevelt, Ford, or Rockefeller, he is entitled to relatively little recognition or prestige by that fact alone. It is what he has achieved in his own lifetime that counts. Consequently, the term "idle rich" when used by an American contains opprobrium for the idle, but not for the rich.

All the five indices that have been mentioned as American assumptions are interrelated in both American life and in the American social myth, with many other factors that contribute to the American cultural pattern.

The Analysis of a Foreign Culture

Since the behavior of the peoples of most countries has not yet been systematically analyzed in the manner indicated here, what can one do when living in a foreign country?

One can become consciously aware of the factors that make us behave as Americans. Since these factors are relative (and there are no absolutes) one can be aware that our economics, our politics, and our social system represent but one of many ways of organizing life.

Language.—The value of speaking the language of the country in which one is stationed is self-evident. But more is involved than linguistic fluency. Because of the far-reaching effects that the structure of a language has in imposing its forms and categories upon those speaking it, they are never aware of how language selects any given people's responses to the world in which they live. As soon as one deals with a language outside the Indo-European family, one will find that each language represents an analysis of human experience, but that no two analyze it from the same point of view.

The class structure.—Because of the rapidity of social movement in the United States, and the goal of individual upward mobility, Americans find it difficult to understand the operation of societies that are more rigidly stratified.

The British, for example, have a relatively rigid class system operating with a political democracy. With the absence of our social mobility there is also an absence of the tension and frustration so characteristic of modern American life. With social position determined at birth, economic activities and relations with other members of society are also determined. An extreme case such as is found in the caste system of India is difficult for us to understand, but it has many advantages from the Indian's point of view. At birth, one is completely placed in the social organization as far as work, marriage, religion, and social life are concerned. Not only is there little possibility to change one's status, but there is no desire to do so, and when change occurs it affects the status of the whole caste, not the individual.

There is also a widespread area in which a two-class system prevails. In Latin America, there is the wealthy, landowning, cosmopolitan aristocracy and the vast majority of the people who constitute an agricultural peasantry. The same kind of system is characteristic of the countries of Southeastern Asia, except that there it grew up locally, and in Latin America it was imported. New classes, such as the growing urban industrial group or changes in the traditional arrangements between the two classes, are symptoms of far-reaching change. It is necessary to see the interrelationship between the two groups to determine how changes are going to affect the society as a whole.

In analyzing a society with clearly marked social classes, it is essential to find out what behavior the members of different classes share, as well as the behavior that differentiates them. Their complementary functions are as important as are their conflicting ones. Frequently, attitudes toward property and toward authority are the same in all classes, as in Holland or Rumania, but different from country to country.

The prestige system.—In all societies there are differential statuses, and usually symbols that indicate status. What is it that gives a man power and importance? Prestige is the power and importance one enjoys as a result of conforming to the standards of the society.

AGE-GRADE SYSTEMS

In some societies one's prestige is taken care of automatically by a series of statuses correlated with one's age. The individual and others of his same age group advance from position to position, assuming different responsibilities and powers at different ages. Thus one is first an apprentice, then a warrior, a married man, and finally an elder counselor.

WEALTH

Wealth may or may not give its possessor prestige and power. With us and the British it does. In many societies mere possession of wealth is of no importance. It must be lavishly distributed, or it must be ostentatiously displayed.

THE MILITARY

Is there a regular class from which military figures are drawn? Are men in uniform permitted to exercise power, and do they enjoy the respect of the people? In Japan and Germany the soldier had great prestige, whereas in old China soldiers were regarded with contempt.

ACHIEVED AND ASCRIBED PRESTIGE

In some countries positions of importance go automatically with one's status, which is determined at birth. In others one has to win the position, as is usually the case in the United States.

The family.—This unit, which is found in every society in the world, is important because it represents a social microcosm of the society as a whole, and because so much of the important conditioning of the individual that makes him a Frenchman, an Arab, a Hindu, or an American takes place within it.

Is the father an authoritative or an indulgent figure? Is he a model for the son's behavior? Do sons identify with the father?

What is the mother's role? What is her status within the family group? Does she handle the household accounts and property? What are her prerogatives?

What is the size of the family group? Is it a large extended family of 30 or 40 people in three generations living as one household, or is it a small biological family of father, mother, and children?

How are sons treated? How are daughters treated? What distinctions are made on the basis of sex? What distinctions are made on the basis of relative age among the children?

How are children rewarded and punished? What behavior is insisted upon? What behavior is tabooed? Is precocity encouraged, as with Americans, or is it a factor of no concern to the parent?

What is the child's first experience with property? Is he given things outright with freedom to dispose of them in his own way? Is he taught to distinguish between family property and individual property?

Is the training of the child consistent? Does he have to learn to be docile in one situation and aggressive in another? How does his training equip him for his roles in adult society?

Conclusion

With a few suggestions such as the foregoing as to what to look for when living with any foreign people, it is possible to make your experience rich and rewarding, and to transmit to others a set of systematic observations, and not a set of useless stereotypes. Every applicant for a visa, as well as opposite numbers in the foreign office, becomes an individual shaped by his experience in a specific culture, and from the regularities in the behavior of many individuals it is possible to distinguish between the cultural patterns of the society and the idiosyncratic behavior of the individual.

The Cultural Approach to Agricultural World Extension in Relation to Economic Development

By Horace Belshaw

Director, Rural Welfare Division, Food and Agriculture Organization

I take it that by the cultural approach we mean something like this: Different people have different customs, different traditions and beliefs, different sets of values, and different realized needs. They organize themselves into groups, choose their leaders and respond to them in different ways. They produce different things with different tools, and eat different foods cooked by different methods. Many of these differences are deep-rooted—the products of history, topography, climate, geographical position, degree of technological advance, and the relation of population to resources.

The cultural approach would recognize and respect these differences and appreciate that they had a value in the way of life of the people, It would try to avoid undermining existing beliefs and relationships and social processes unless and until new ones were established that were better. It would use existing incentives, methods of response, groups, and leaders to bring about desirable changes and help create new organizations where those existing were inadequate or unsuitable.

I have used the words "better" and "desirable changes" because the function of agricultural extension is to promote change—improved production, processing, distribution, home amenities, health, and so on—and we have to believe that such change is desirable or there is no faith in a program. But there is a responsibility, especially for a stranger, to endeavor to discover what is desirable in a given context.

Unless we adopt the cultural approach, the programs may well fail; or, if they succeed, do damage to existing beliefs and social organization that could be avoided by a slower tempo or another approach. The history of the contact of commercial civilization with others gives countless tragic examples of this damage. There is nothing new in what has been said, and I imagine that extension workers at this meeting would agree broadly with it; but occasionally it is desirable to reiterate the viewpoint, and the present time appears to be one in which to reconsider and reemphasize the cultural approach.

Bridging the Gap Between Technician and Peasant

Under the Point 4 Program, technical assistance is to be given to less developed countries. These countries are mainly agrarian. A great deal of advanced technical knowledge seems likely to be forthcoming; but often a great gap exists between the advanced technician at the top with his knowledge and the peasant with his needs and limited resources. The peasant, however, will be the foundation of technical programs. He does the work, and it is important that he and his family should benefit from them.

To bridge the gap may well be the crux of the problem of rendering effective technical assistance in agricultural areas. If this is so, social scientists and extension workers have a vital role to play, not only in diagnosing the social aspects of the problem of development, but also in promoting techniques by which the participation of the farmer and his family may be assured, and the benefits accrue to them.

The United States has an extension system that has been conspicuously successful, and its experts will be called upon to help develop extension work in less advanced agrarian countries. It will matter a great deal to success whether this emphasis is on developing the structure of a well-advanced extension system such as that in the United States, or whether the effort is exploratory, emphasizing the processes by which the peasant within a community may be persuaded to participate, and progressing from this toward an integrated system as experience is gained. The latter approach means developing the foundations of organization through field work.

The question as to which viewpoint is stressed is not an idle one; for advisers may be impatient of the exploratory approach and prefer something more spectacular and attractive. In working out a well-rounded plan from the start, agrarian countries themselves are also often impatient for improvement, and may be tempted by the ambitious and the spectacular. The matter is, of course, one of emphasis. All that I am suggesting is the wisdom of placing main emphasis on requirements for work at the village level, and proceeding from this toward a coordinated system, meanwhile keeping national plans flexible. This seems to me to be in line with the cultural approach.

The broad characteristics of agrarian societies in less-developed countries seem to justify this view. In such societies, people usually live in villages, isolated by distance and poor transport, illiteracy, and other barriers to communication. Local loyalties are strong, and the people are often suspicious of the stranger, especially the official. Usually the family, the farm, and the home are one enterprise. The whole family provides the labor; the farm is the main source of income and the main field of endeavor. But the house is not merely a shelter. It is also a storehouse, a barn for livestock, and a place where handicrafts are practiced. Much more than in North America, occupation and the rest of life are one; much more, farming is a way of life.

Need for an Integrated Approach

It is even more important than in commercial farming countries to adopt an integrated approach covering all members of the family, and taking account of the close interrelationship of needs. Poverty, low productivity, poor nutrition, and ill health are part of one problem. To increase production, it may be necessary first to increase energy by an attack on malaria or other preventable diseases. More food may not greatly benefit until the ravages of intestinal parasites are reduced by better sanitation or improved water supply. So agricultural extension may have to devote much attention to problems that are marginal or left to other agencies in more advanced countries, and it may have to begin at a different point. So, deciding where to begin is an important question, especially as initial success is often half the battle. Response will usually be most ready to felt needs, and these must be discovered. Moreover, there is sense as well as nonsense in folklore, just as there is, at times, confusion as well as enlightenment in modern science. It is important, in order to specify needs, to call on the wisdom of folklore as well as on the power of science.

Of course there are other needs that are not yet felt by the countryman, and obstacles to improvement, both social and technological. So the problem has to be diagnosed to discover these needs as they exist in communities, and the human as well as the natural resources available and the groups of leaders to use. This does not necessarily mean that one should begin with full-dress sociological inquiries, complete with questionnaires and enumerators. Having known the tax gatherer, the countryman may have a natural suspicion of inquisitive outsiders.

Some of the most serious needs will be readily apparent, however, and may provide a starting point. "There is a social concept all too frequently overlooked," wrote Albert R. Mann, formerly dean of the College of Agriculture, Cornell University, "that one of the best ways of studying the most difficult and needy situation is to do something about it." This implies an unfolding program, starting from small beginnings and gathering information progressively as the necessity for it arises. The method of diagnosis will differ with circumstances, but some there must be, and the person from another country may be ill advised to prepare national blueprints until he has some knowledge of the complex of needs and culture.

Self-Help Is Important

In any approach, the promotion of self-help must be an important objective, and this of necessity must begin with the community. Education and the use and development of rural organizations are important means to this end. Education is concerned not simply with showing how, but also with persuading to do. Rural organizations strengthen the individual by mutual help, are necessary instruments of extension, and themselves have educative value. So education, the use of existing organizations, the development of new where needed, such as cooperatives, are part of the same process of promoting rural development. Rural people already organize the better to satisfy felt needs, and a main task of the extension worker is to discover rural organizations, strengthen them for existing tasks, and use them for his program. Intellectually, no doubt, this is a commonplace, but it must also be felt, emotionally if you like, as a guiding principle of action.

If the worker discovers and understands rural groups and attitudes, he will be on his guard against transferring types of organization from other communities without suitable modification. Thus, in patriarchal societies, 4–H Clubs on the American pattern with farm and home projects have been found to require modification, because all belongs to the head of the family who is reluctant to abdicate his rights and authority. Similarly, work with women must be adjusted to take account of their inferior status in such a society.

To succeed, at least in the beginnings, extension programs require to be related to existing habits and customs. So also do educational techniques. An investigation made in Java in 1938 showed that illiteracy actually increased under a modern educational system. The people resisted moral pressure to use schools; individual and collective reading had fallen off when native scripts were replaced by Roman; and the custom of gathering weekly at the sage's house for reading and reciting old texts was disappearing. New textbooks were written combining practical information, songs, and poetry. Local songs, dances, and games became a part of the curriculum, and 5,000 village libraries were established, provided with books, writing materials, and musical instruments. Within a year, 19,000 adults learned to read and write, and there was a great influx to the schools.

The Local Agent Must Be Practical

Improvements must also be within the means of the people. There is, however, great scope for these by the extended adoption of better practices already known in production, care of the home, health, and nutrition, and by simple improvements of existing tools and practices. Advanced technical knowledge and research are important, but in the emphasis on these, simple possibilities already closely linked with existing culture must not be overlooked. These simple possibilities suggest that the local agent must be a practical person, able to demonstrate them, and be versatile in methods of persuasion and teaching among a people often mainly illiterate, rather than a highly specialized technician. He must know his community, be of it, and accepted by it.

This brings us again to the problem of the gap to which I referred earlier. In many countries, those with higher training are drawn from urban populations or are large landowners. They are remote from the peasant, speak a different language, and do not understand him or his problems. They want a desk job in a government department or at the university. So I suspect that for some time to come, a main requirement will be to train local leaders from and of the people in such a way that training does not divorce them from their community. This has been done or is being attempted in many parts of the world, and the study of such attempts might well repay effort: Training in sanitation and medicine in Java, Fiji, and southern Rhodesia; in agriculture, small-scale industries, and cooperatives at the Shantan Bailie School in Kansu Province, China; in the community centers of Dr. Spencer Hatch and others in India and Latin America; in the Antigonish movement in Nova Scotia. Special emphasis on the training of rural leaders may be of prime importance in extension development and permit progress more closely in line with the cultural approach.

It has been suggested that within a country, a good principle is to aim at permitting self-help in rural communities. The same applies in international affairs. It is important to seek ways to enable member countries to best help themselves and use most effectively their own human and natural resources. One way, though not the only way, is to promote an exchange of opinion and judgment among people actually engaged in a problem, especially on a regional basis among countries similarly placed. Just as folklore and science can both be used at the community level, so the specialized knowledge of local experts can be combined with the different experience and knowledge of people from other regions at the international level. Both are important ingredients.

The Food and Agriculture Organization has followed this practice by technical meetings, in various phases of agriculture, forestry, fisheries, nutrition, and economics. In the field of extension and rural organization, the same principle is being followed in meetings on cooperatives in the Far East and agricultural extension or adult education in Europe and Latin America.

I have been asked to refer to the proposed workshop on agricultural extension to be held at Turrialba, Costa Rica, in August of this year as an example of this approach. The general plan is to have a working group, consisting of people actually engaged in educational activities, to increase production and well-being in rural communities, and to aim at intimate discussion. It is proposed to begin with a diagnosis of the major needs to be met, the factors giving rise to them and presenting obstacles to satisfying them. This group will consider existing attitudes, customs, and rural organizations and that should be taken into account and may be utilized. This will be followed by an examination of existing methods and experiences covering not only problems and difficulties, but reports on significant developments that may provide guidance to other countries. Consultants in extension techniques, organization, demonstration, and other aspects of extension will be available, and members of the workshop will be able to discuss with these consultants the applicability of developed extension techniques under the cultural and social conditions in their own countries. They will consider (also in the environment of their own countries) the principles and requirements for the establishment of an adequate extension system, and for its successful functioning and evaluation.

This is an attempt at an expression of the cultural approach at the international level. It aims to make available knowledge and experience of countries where extension is well developed, but it does not say, "We have succeeded. Go ye and do likewise." Rather, the approach is, by a blending of experience of different kinds, to promote thought and action appropriate to the circumstances of each participating country, indicate how mutual aid may be fostered among them, and how international agencies may best assist in promoting national self-help and collaboration.

AREA COMMITTEE REPORTS

The Middle East

Egypt, Iran, Iraq, Lebanon, Saudi Arabia, and Syria

The Region and Its People

The Middle East is predominantly rural in its way of life. Approximately 75 percent of the total population engages in agriculture as its major occupation. Agriculture is the foundation of the national economy in each of the countries concerned, and accounts for the greater part of the total value of all exports. Furthermore, possibilities for economic development lie mainly in the agricultural field, including elementary agricultural industries.

This rural predominance is both economic and cultural. Upon analysis, we find that rural culture with its folkways, mores, and traditions, constitutes the wide and stable base upon which the national organization stands. This reality has not been given due recognition. Rural culture, which is mostly inarticulate, has not been given the consideration it deserves in the rapid national awakening that has taken place during the last 50 years. In other words, national consciousness has not yet been fully focused upon the peasant with a view to according him the status of a worth-while citizen, a representative of the majority of the population, and an actual and potential major contributor to national economy and culture.

Some promising beginnings have been made in this respect within the region, however. Here and there one encounters certain private or governmental agencies genuinely concerned about the welfare of rural folk and actively engaged in projects for their improvement. Also one comes across an increasing number of leaders who have fully identified themselves with the deprived and neglected cultivator of the soil. It must be emphasized that these projects are only beginnings, a few steps on a long and difficult road. The problems to be tackled are tremendous. A brief description follows of the most important among those problems under which the rural community staggers.

Major Rural Problems

Perhaps the fundamental problem that is most urgent is that concerning land tenure. In fact we find here a complex of problems, each of which has been a potent factor in retarding the economic, social, and national development of the region. One of these is the extreme concentration of cultivated land in the hands of the few, who are mostly absentee landlords. This, of course, has resulted in the development of a large peasantry, the majority of all cultivators in the region, who are either landless share croppers and laborers or owners of insufficient land. The levels of living of these deprived masses are among the lowest in the world.

Even where private ownership exists in the form of small, independent farms, we encounter the peculiar problem of fragmented holdings. This problem has developed as a result of the prevailing inheritance laws and because all farmers live in village communities. Owners of rich land find it difficult and costly, if not impossible, to apply improved techniques of production.

Equally fundamental and important is the problem of population growth in relation to cultivated areas. Egypt presents an extreme case in this respect. There, over 20 million people live mainly on the produce of less than 6 million acres (equivalent to 9 million crop acres under the intensive cultivation system of that country). During the last few decades, population has been increasing at the rapid rate of about 2 percent annually, much faster than cultivated land has been expanded. Consequently, Egypt stands now face to face with a tremendous problem, and is looking for every possible means to alleviate the pressure.

Lebanon is suffering from the same problem, although to a lesser degree. Other countries of the region are rather sparsely populated, and most of them have greater possibilities for the expansion of cultivated areas. Even these countries will face the same problem in the long run, however, if the present rates of population growth persist.

Another major combination of problems is presented by health conditions. The health status of the region is low, whether the index of measurement is infant mortality, morbidity, or general death rate. Human life is unnecessarily wasted, and the productive capacity of the individual and his enjoyment of living are impaired. Such diseases as trachoma, Bilharzia, hookworm, typhoid, and dysentery, to mention a few, are common. Infant mortality averages around 20 to 30 percent. Medical facilities in rural areas are far from adequate. Knowledge of the causes of disease and sanitary practices is meager. Water and housing facilities are generally poor. Nutrition is adequate with respect to caloric intake, mostly from cereals, but is deficient in protective elements. In some parts of the region the incidence of nutritional disease is significant.

The rural Middle East suffers from lack of adequate educational facilities. Only in Lebanon do we find the rate of literacy reasonably high. In the rest of the region not more than 10 to 15 percent of the rural folk know how to read and write. The number of elementary schools is far below the need of the village communities, and intermediate and high schools are even fewer. Expansion of agricultural training on all levels is greatly needed. Well-organized systems of adult education are needed as well.

Another broad and urgent problem is the need for application of sound modern techniques to agricultural production. The great majority of cultivators in the region lack adequate knowledge of effective practices for pest and disease control, soil conservation, livestock breeding, seed selection, and utilization of farm machinery. Many prevailing practices have been continued from ancient times with little or no modification. A team of two animals pulling the wooden plow, the hand sickle, the threshing board, irrigating by bucket, and cultivating by hoe are a few illustrations.

As a result of this poverty of technical knowledge, the yields per unit area in the region are extremely low. Egypt is the outstanding exception to this rule. The land there is intensively cultivated under perennial irrigation and yields are very high. On the other hand, manual labor in Egypt is abundant and cheap, and is the main source of power in agricultural production. Consequently, production per individual in that country, as well as in the rest of the region, is extremely low and results in an equally low standard of living among the peasant masses.

An important aspect of this broad problem is the region's need for expansion of its irrigation. Rainfall is limited in quantity and restricted seasonally. It is sufficient for the growing of crops only in a minor part of the region. Irrigation, therefore, is the answer. Although Egypt is highly developed, expansion is now a pressing matter because of rapidly increasing population. Some expansion could be effected through the enlargement of existing dams on the Nile and the construction of additional dams on the upper portion of the great river in the Sudan. In Iraq and Syria great potentials exist in this respect. Also Lebanon, Saudi Arabia, and other countries of the region have good possibilities. The situation definitely calls for the application of modern technology relative to the efficient utilization of rain water and the harnessing of the several river systems for flood control, irrigation, and the generation of power.

Another aspect of the same problem is the need for expanded research in agriculture and other aspects of rural life. Continuous research has no substitute in solution of various local problems as they arise. Borrowing the results of such research from abroad is essential and helpful to a certain extent, but it is the body of knowledge, accumulated as a result of investigation under local conditions, that really counts in long-range programs of development. The region as a whole is poor in this respect. Only in Egypt do we find that scientific research has been firmly established.

Closely connected with the matter of production are the problems of processing and marketing of agricultural products. Here we find the striking contrast of highly developed techniques existing side by side with crude practices. In general, efficient processing and marketing are restricted to certain exportable cash crops such as cotton, onions, citrus, and dates. The storage of grains, the production of dairy items, the packing of produce and transporting it to local markets the handling of livestock and its products, and home and community canning leave much to be desired.

Other problems or needs of the rural Middle East are the extension of short-term credit, the development of cooperatives on the basis of the local village culture, the settlement of nomadic tribes to make possible for peasant folk some leisure for the enjoyment of wholesome recreation, and the development of trained rural leadership on both local and national levels.

Need for Extension

We wish now to single out for special emphasis one fundamental feature of the Middle East that is the basis of each one of the problems we have just discussed. We are talking here of the wide gap that exists between the very small minority of scientific, technical, and political leaders and authorities at the top of the national pyramid, and the great masses of deprived peasants at the base. The distance between the two groups economically and socially is great, and the means of communication between these groups are far from adequate. A basic need of the Middle East is that it become actively rural-conscious, to discover its rural self and, consequently, to bridge over the gap between the two segments of the population. The economic and cultural center of the region is deep in the heart of its rural community. National progress is inseparably tied in with the progress of rural folk. Such progress is most adequately measured by the standards of living enjoyed by the mass of a country's population with respect to such basic items as food, housing, health, home life, education, and leisure for the enjoyment of creative living.

With such needs and problems, rural life in the Middle East calls for the organization and expansion of extension systems that are conceived broadly and soundly. Promising beginnings have already been made. Egypt leads in this respect, with a bold program of rural centers aimed at the improvement of various aspects of rural life. In 1941 there were 5 such centers, compared with over 100 in 1949. At each center qualified personnel cooperate with the village folk in introducing improvements in agriculture, health, education, home industries, and recreation. Egypt also has a well-established agricultural cooperative organization serving the peasants in more than one respect. Several private or semiprivate agencies also are actively engaged in welfare and educational activities among the rural people. Similar beginnings on a smaller scale have been made in Iraq, Lebanon, and Syria. The Near East Foundation of New York and the American University of Beirut have pioneered successfully in this field. A promising trend has been started in the Arab villages of Palestine by organizing gardens at village schools and gradually transforming the schools into dynamic centers of community improvement. At present, the Department of Agriculture in Iraq is putting special emphasis upon the training of an increased number of field workers, with a view to reaching farmers effectively with improved techniques. A similar trend is now rapidly developing in the villages of Syria at the hands of experienced rural teachers and leaders, who are worthy refugees from Palestine.

Although promising and encouraging, all these activities are but a small beginning, limited in scope and influence. Much more has to be done before extension in each of these countries becomes an effectively comprehensive educational movement. Trained personnel in this field are scarce. Most of the field workers function at present as tax collectors, census men, control officers, and extension agents as well. Usually, improved practices are applied by orders from above by telling the farmers what to do and what not to do. The philosophy of extension as an educational, cooperative undertaking, as a two-way traffic between authorities and farmers, and aimed primarily at the welfare of the individual, his family, and his community, has not yet taken a firm hold in the Middle East.

The following observations are made as an illustration of what the extension method involves:

It is well for the extension worker to know that new ideas and methods are disturbing to the individual's feelings of security. Each new method will require some readjustments in the individual's customs and ways of living, and until he understands the new and its effect upon him and his family, he will resist the change. This reluctance is a natural human response. The greater the lack of general knowledge, the greater this resistance will be. The worker needs to accept the fact that when we take on new ideas and methods we add to the complications of life, for many of our new features throw some old ones out of gear and bring new confusions into life. Readjustment must be a part of the program.

If the agent is working with the less informed population, he needs to use the emotional avenues of appeal. One of these is the closeness of family ties. The less complicated the civilization, the closer these ties are apt to be. The love and concern members of families have for each other are usually strong. There is also some interest in physical well-being in the avoidance of pain and danger. New ideas are acceptable when understood in this light. If serious illness or death has occurred in the family, the door is open even wider for the consideration of preventive and beneficial programs. The agent should remember that in most cultures the head of the family has a deep interest and pride in providing for his family. If he can see that a new practice will make him a better provider and thus increase his stature as a man, he will be more willing to undertake change. In addition, in most peoples of the world there is a desire to be like the others in their group. This makes possible a chain reaction in educational effort.

If the extension agent is going to use these avenues of approach, he must first establish some rapport with the people with whom he has to work. When he first comes into the community he should try to make himself a part of the community or village life, follow its ways of living and doing, and show a friendly interest in the lives of the people. While doing this he can more easily discover the person who seems to be the natural leader in the village or community. This natural leader is the first person to be helped to relate the information or services available to the life of individual families. This prepares the leader for the task of making home visits and contacts with individual families to help them gain the understanding that has been given him, and is the first step toward action. If this understanding is accepted by the entire family, action will be stronger and the education of parents and children will make for a long-time carry-over of interest and action. When a few families have become interested in the problem and its solution, there is the beginning of a sponsoring or advisory committee. This committee should be called together by the natural leader, and the initial plans for action should be laid down by the group itself. The professional worker should serve only as a resource person and wait until called upon to make his contribution of information and his suggestions regarding the plan. He must then be willing for the committee to change his plan according to its ideas as to the fitness of the plan to their way of life. The extension agent must remember that a good plan for any problem's solution is always based upon the best values existing in the situation. The best habits and methods being used may have been the evolution of generations of effort and should find a place in the plan. From this small committee and through its efforts a program can move into a larger group. In this way action is in the hands of the people, and the professional worker guides the program through their leadership.

Problem Analyses

In light of the foregoing considerations, we shall attempt an analysis of a few pertinent problems, showing the type of practice or practices involved, forces of change concerned, the application of extension techniques, and specific features of the culture that should be taken into consideration.

Land tenure

1. Statement of the problem:

a. Too many categories of land; confusion in ownership, lack of clear title.

b. Concentration of land in the hands of the few. In Syria large estates, owned by a relatively small part of all owners, account for about 60 percent of all land. In Egypt about one-half percent of all proprietors own 37 percent of all cultivated land.

c. Absentee ownership.

d. Majority of cultivators are landless share croppers and laborers, or do not own sufficient land.

e. Fragmentation of holdings.

f. Progressive wasting of the land resource because of the foregoing conditions.

g. Low levels of living predominating among the rural masses as a result of the tenure system.

2. Analysis of practices involved:

a. An important part of the land is in the wakf category—land dedicated to religious or charitable purposes. This dedication is an old religious practice, aimed at holding the land in trust. Such land cannot be sold or disposed of otherwise. In accordance with deep-rooted tradition, land in this category is not cultivated efficiently and cannot be improved. It served a worthy purpose at the beginning, but is not out of place within the framework of modern agricultural economy. The following are the major obstacles to improvement: (1) Strong influence of religious tradition; (2) formal legal objections, based on the religious law; (3) vested interests benefiting from the present situation.

b. Another widespread practice is the concentration of land in the hands of the few, who are mostly absentee landlords. This has come about partly as a result of the custom of early rulers, who donated land to soldiers, heroes, or court favorites. At present this practice of donation from state domain persists in one form or another. It is especially noticeable in the transformation of tribal chiefs into absentee owners. It is also noticeable in the large areas of potentially cultivatable state domain that are acquired by large owners as soon as a reclamation project is announced by the government. This practice, resulting in the development of a great mass of landless or near landless peasantry, has been one of the major causes of the socioeconomic backwardness of the Middle East. Improvement in this fundamental aspect of the agricultural economy of the region has been blocked by the following factors: (1) The large landowners, most of whom rule the country and make the laws, are not inclined to legislate in favor of the peasantry. (2) Because of national immaturity, it is not yet fully realized that progressive national development can only be achieved by an emancipated, enlightened citizenry. (3) A great gap exists between the small minority at the top and the deprived peasant masses in whose welfare the small minority is not actively concerned. (4) Technical know-how is lacking in effecting transition with regard to both physical means and cultural implications.

c. A third practice or problem of the land-tenure system is the extreme fragmentation of holdings. This is true of those localities within each country where land is privately owned. There we find each farmer the owner of a few acres of land, fragmented into very small holdings and scattered all around the village proper. This is an inefficient practice, as it wastes much of the cultivator's time and hinders or precludes the application of improved techniques. It is chiefly the result of farmers' living in isolated villages, and of inheritance laws that require the division of land equally among the children or other heirs. Obstacles to improvement are the prevailing inheritance laws, absence of legislation setting a minimum size for a holding, and ignorance by the farmer of the problems involved.

3. Forces of change for improvement:

a. The concern for changing and improving the land-tenure system is of recent origin. Within the past few years, however, it has been growing rather rapidly. Increased writings on the subject, public talks by leaders, some political platforms, some action programs by certain governments, and increased awakening by the peasant masses reflect the trend.

b. The desire for reform is expressed mainly by the following individuals, groups, or agencies:

(1) Social scientists from abroad and within the region, including rural sociologists, economists, social workers, historians, and political scientists.
(2) Other liberal intellectual elements in the region.
(3) Rural welfare agencies.
(4) Some political leaders and parties.
(5) Some governments.

c. The only agencies organized and equipped sufficiently to effect any worth-while improvement in the system are either the political parties now in power or those bidding for power. The other groups mentioned are in a position to help by applying pressure on the governments concerned. An example of a promising possibility was a recent proclamation by the Syrian Government to the effect that state land would be distributed among the landless peasants. A similar statement was made in the spring of 1949 by the Department of Agriculture of Saudi Arabia. Iraq has embarked upon a few projects for settling tribes on state domain.

d. Practically no extension approach has been used with respect to the land-tenure problem. The solution is dependent primarily upon the initiative of the government in taking the necessary steps to distribute land to peasants, modify inheritance laws, and set a minimum size for land holdings. Extension technique can be helpful, however, in connection with fragmented holdings. A sustained educational campaign would convince the leaders, and even the rest of the community, of the desirability of consolidated property. Exchange could be effected on a voluntary, cooperative basis; also a ban on breaking a holding into parcels less than a certain size could be established as a community practice. Furthermore, once distribution of land is effected, application of extension technique will become imperative as a means for helping the share cropper make the transition into independent farming successfully and permanently.

e. Cultural factors to be taken into consideration:

(1) Loss of prestige by the large landowner, if he loses part of his land or some of his tenants.

(2) The leader-follower relationship existing between landlord and share cropper. The latter might feel lost if such relationship is severed.

(3) Inability of the share cropper to function effectively as an independent owner.

(4) Religious implications involved in the partition of wakf land.

(5) Strong attachment to individual lots as family inheritances to be considered in consolidation of fragmented holdings.

(6) A long series of adjustments to partly new situations involving family, community, and national relationships.

Illiteracy

1. The present situation:

a. With the exception of small Lebanon, rural areas of the Middle East suffer from a very low rate of literacy, ranging from 10 to 20 percent.

b. Until recently, educational facilities have been heavily concentrated in urban centers.

c. Because of lack of follow-up educational work among adults, a large percentage of those who finish the elementary grades lose their literacy ultimately.

d. This high rate of illiteracy has been one of the main factors responsible for retarding the development of rural life. Rural folk are kept in a relative state of isolation and ignorance. They cannot cope adequately with their farming, home, and community problems. They cannot be reached effectively with aid in the form of improved techniques and practices. They cannot express themselves adequately as active citizens.

e. Major obstacles to improvement are: (1) Lack of overwhelming national consciousness that education of the peasant masses is at the foundation of national progress; (2) relative scarcity of school facilities in rural areas; (3) an inadequate number of teachers; (4) disinclination of teachers to live in village communities; (5) marginal economic existence of the cultivator, which forces him to utilize the labor of his children, instead of sending them to a school, when one is available.

2. Forces of change for improvement:

a. During the last two decades concern for the solution of this rural problem has been manifested in practically all of the countries under consideration. One hears and reads more about the problem and observes definite achievements, which are indications of a promising trend.

b. The major groups or agencies concerned are: (1) Practically all educators and other intellectuals; (2) all the educated younger elements; (3) departments and ministries of education, agriculture, and social welfare; (4) an increasing number of private organizations engaged in literacy campaigns; (5) some of the political leaders; and (6) some political parties.

c. The various governmental agencies aforementioned are sufficiently organized and equipped to extend school facilities to an increasing number of village communities. Egypt has gone as far as to make elementary education compulsory by law. Applying the law in rural areas, however, has been far from complete, because of the insufficiency of teachers and of school facilities, and the poverty of the farming people. The Ministry of Education in Iraq has been moving rapidly along this road. Recently Syria has embarked upon a policy of rapid expansion of school facilities. The rural community of Lebanon is already high on the literacy ladder. It must be observed, however, that this expansion of school education in rural areas is still limited and slow when compared with the great need that exists and the urgency of the problem. The situation calls for the utilization of a variety of measures in addition to school expansion, in a frontal, relatively short-term, national attack on the problem of illiteracy. Such an attempt has been made by a few private organizations. The Village Welfare Service movement of the American University of Beirut is a pioneer in this field. It has designed special texts for teaching adults, and utilized the volunteer services of a large number of teachers and educated youth in a literacy campaign in the rural areas of Lebanon and Syria. Similar organizations have been active in Iraq and Egypt.

3. In general, all the private agencies mentioned have utilized the extension or educational approach in attacking the problem. The literacy organization, being a completely voluntary activity, uses no coercion on its members. The motive for enlistment is a basic understanding of the problem involved and a desire on the part of the educated person to be of service to less fortunate rural folk. The

same educational, cooperative approach is utilized in dealing with adult farmers in literacy classes. They join of their free will, in response to a felt need to become literate. The formal governmental approach to the problem, on the other hand, has been in general a one-way traffic from the government to the farmers. Many schools have been founded without those responsible finding out whether or not the village folk wanted them at all or in another form. The law for compulsory education would be applied in a certain village without the benefit of an educational campaign to make the people understand such a law and desire its application.

4. Cultural factors involved.

a. The traditional desire among the people of the region for learning as an end in itself. Literacy and education impart prestige to an individual in a village community.

b. The religion of Islam is strongly in support of literacy and learning. In the Koran, the sacred book of Islam, several statements exalt learning or urge its acquirement. Learning how to read the sacred book is strongly desired by a Moslem.

c. The great literary and other achievements of the Arabs in previous times. This treasure, much of which is now available in modern printed form, could be utilized as a strong motive in a literacy campaign.

Sanitary drinking water in Lebanon

Approximately 40 percent of the people of Lebanon drink filtered and partially chlorinated pipe water. These people live mainly in the capital city, Beirut. The rest of the country utilizes private or public shallow wells and springs (40 percent) and rivers (20 percent). Reservoired rain water is rather common in certain sections, but is largely used for domestic and other nondrinking purposes. A whole village may utilize a single spring or well, a series of villages may utilize a single spring or well, or a series of villages may utilize one river that passes through them all. The primary catchment area of waters in Lebanon is in the region of the high, uninhabited mountains that are crowned with snow for at least January and February of every year. Yet, because most of the soil is limestone and most of the secondary more direct watersheds are inhabited by human and animal population, the resultant available water, whether surface (streams and rivers) or ground (wells and springs) is subject in variable degree to human fecal contamination. All the ground and surface water should be considered potentially contaminable for the following reasons: The ground-water level in many places is high (5 to 10 feet down) and in places emerges to the surface in the rainy winter season. Almost all used ground water comes from this superficial water table and is nonartesian. Incidentally, artesian wells are not used. Their trial in one instance produced a highly colored and tasteful water that was not potable. Approximately 40 percent (most of the urban section) of the total population disposes of human waste in sewers leading to the Mediterranean Sea, and the remaining 60 percent (rural population) uses either nonsanitary surface and pit privies or no privies at all. Very few of the people use septic tanks.

Actual bacteriological, chemical, and field-survey analyses of many sources of drinking water have shown gross human fecal pollution. The real hazard, however, lies not so much in this isolated short circuiting between excreta on the one hand and drinking water on the other, but in the fact that human carriers of typhoid, amoebic dysentery, and various intestinal worms abound unidentified in all sections of the country, rendering this otherwise "harmless" and almost universally present fecal short-circuited contamination really hazardous. This short circuiting between the excreta of one and the mouth of another is further aggravated by vegetables' being irrigated by the same contaminable waters, and not too infrequently fertilized or dirtied by night soil.

This practice exists because—

1. There is insufficient appreciation of the real hazard involved in drinking potentially contaminable water. The incidence of waterborne diseases in Lebanon has not been dramatized intensively enough to impress itself upon the lay and professional population; the apparent "nonharmful" use for centuries of these natural waters without apparent health inconvenience, the mass habituation to the taste of natural nonpure waters, and the common lay concept (partially correct) that running waters (rivers and streams) cannot carry filth, all have contributed to the unawareness of this potential hazard.

2. Capital is not sufficient to enable all water supply to be rendered potentially safe for human consumption. Although a health ordinance requires sanitary waste disposal by every house owner and watershed protection, yet the enforcement of this ordinance is not practical because of the expense involved.

3. The presence of the high ground-water table already mentioned presents a technical difficulty that prevents the use of a practical means for insuring both sanitary waste disposal and safe water supply in many rural areas.

4. The population lacks cooperative spirit. Such a group team spirit is indispensable for demonstrating the relative economy of installing public pipe-water supply and public-sewage disposal over that of operating the existing individualized water and waste systems in all rural and in some urban areas.

Obstacles to improvement are: Ignorance, inertia, poverty, technical difficulty, and lack of sufficient teamwork among the people.

The social institutions upon which to base further development in water sanitation are the medical profession and the medical schools, the ministry of health, and the Lebanese Public Health Association. In addition, subsidiary institutions such as the village welfare movement of the American University of Beirut, the American Near East Foundation, and the Rockefeller Foundation have not grafted themselves yet upon the nation's social pattern.

1. The concern for change is in regard to the real disease hazard, already referred to, that is involved in the short-circuiting between human excreta and drinking water for human use.

   a. The individuals showing this concern are a few who are public-health-minded and are largely recruited from the medical profession. The groups that show the same concern are the social institutions already mentioned. Worthy of repeated mention in this connection is the new Lebanese Public Health Association, which represents the core of the public-health-minded members of the medical profession and is the only group technically prepared to guide reform in this direction.

b. This concern is expressed in press articles, radio talks, daily verbal gossip, popular lay lectures aimed at forming an enlightened public opinion that would either effect reform voluntarily and on its own initiative, or through governmental channels. It is also expressed in a good deal of general unconscious dissatisfaction with existing insanitary conditions whch is gradually crystallizing itself through the help of American oil companies, the Rockefeller Foundation, the Commonwealth Fund, the Near East Foundation, and the American University of Beirut, into a department of preventive medicine and public health in the medical school of the American University of Beirut.

2. Evidences of the potential achievements in water sanitation are the activities of the village welfare movement and of the Near East Foundation, which for many years have been spreading a good deal of health education in select villages, and attempting to demonstrate practical methods for attaining safe water supply and sanitary excreta disposal in rural areas. The Lebanese Public Health Association is attempting a nation-wide scientific sanitary survey inclusive of water sources and their potentialities, and the Ministry of Health has recently started five health units in the five districts of the country, with the aim of spreading health education and improving the existing sanitary situation.

a. The Lebanese Public Health Association is the group organized to carry out specific health-reform activities of all sorts in a manner similar to that of the American Public Health Service. Among its other projects for research and survey, this association plans to carry on a nation-wide health-education program by using a mobile unit in a select area for demonstrating feasible methods of improved rural sanitation.

Extension approaches could be made through existing groups already mentioned:

Village welfare movement (education and demonstration) started in 1933.

Near East Foundation (education and demonstration) started in 1931.

Lebanese Public Health Association (survey, research, education, and demonstration) started in 1948.

Ministry of Health (education and project execution) started in 1948 and extending its program in demonstration through the help of the Rockefeller Foundation.

Karagheusian health centers in Armenian communities (education and sanitation).

The additional extension program that is badly needed is the setting up of a demonstration in rural sanitation such as is contemplated by the Rockefeller Foundation and the Lebanese Public Health Association. The demonstration would be conducted in one selected area and on a duplicable basis, in the light of a carefully done sanitary survey (as is contemplated by the Lebanese Public Health Association). If money could be extended to this association, which already has the technical knowledge, the financial investment would not be wasted.

The extension and educational job in water sanitation is done by the various agencies already mentioned.

The water-sanitation problem of Lebanon, and a similar health problem of any country in the Arab East, for that matter, is impossible to envisage without due regard, in correct perspective, to the three constituent factors of any health problem—the human population, the disease-producing population, and the physical environment or land where these two populations interact and have, as in the Near East, surprisingly coexisted for centuries. No health program can be rationally and effectively carried out unless it is made to interfere in this biological balance between man and parasite (disease), in the permanent interest of man. The sheer sentimental objective of reducing, through health activity, the disease-producing parasites without due regard to the existing high birth rate and high density of human population (such as exist in Lebanon) is bound to be premature and of transient effect, and to defeat its own end in the long run. Fundamental health reform is inseparably bound with, and dependent upon, the potential agricultural development of the land and the economic enhancement of the living standards of the human population.

In conclusion, therefore, four principles stand out in significant prerequisite relationship to any health or sanitary reform in Lebanon (and the rest of the Arab lands):

1. No health practices that have succeeded elsewhere can be totally duplicated in Arab lands without careful analysis of peculiar local conditions. Money is needed to carry on research into the local behavior of the disease parasite and of the human host under the given local physical environment before any rational choice or knowledge of applicability of any health practices can be made or acquired.

2. Mass education in elementary health principles is a fundamental step in initiating any rationally planned health-reform program. This requires money and can be carried out in conjunction with the similar educational units used in connection with agriculture extension work. Group-dynamics tactics are necessary in the creation of a front of enlightened public opinion. Deep-seated attitudes among the people have to be reckoned with before any sanitary reform program is started. Even the medical profession itself does not possess sufficient public-health consciousness, being preoccupied mainly with cure rather than with prevention.

3. The raising of living standards needs to precede any health reform. Improved economics and sociology would reduce the birth rate and, such fundamental approaches being of a nonhealth nature, suggest that perhaps the real prerequisite for health reconstruction lies outside health altogether, in the field of agriculture and general education.

4. Sanitary reform is expensive and needs capital. Land produce must be increased to meet this need. Agricultural reconstruction is, therefore, indispensable for health reconstruction, not only indirectly,

in reducing the high birth rate in Lebanon and Egypt and other countries as well through raising the standard of living, but also directly, in supplying the necessary funds for the execution of the health projects themselves.

AN EXPERIMENT IN RURAL RECONSTRUCTION IN AN EGYPTIAN VILLAGE

Al-Manayel is a small village located about 15 miles to the northeast of Cairo. Being typical of a great number of village communities in the delta area of Egypt, it was chosen in 1939 by the Egyptian Association for Social Studies as a center for the conduct of an experiment in rural development.

At the beginning of the experiment the condition of the community showed that housing was inadequate, being of flimsy construction, crowded, and badly mutilated. Streets were narrow, irregular, and filthy. Close by were three dirty ponds, a source of malaria and other diseases. Piped water was practically unknown. People drank from the irrigation ditch running from the Nile through the village. The same ditch was used for washing and bathing. Toilets and other sanitary facilities were nonexistent. Clothing was meager, as was household furniture. There was no school, and the children were obliged to walk to a neighboring village for some education. Similarly, no medical facilities were available. Diet was lacking in meat, dairy products, fruits, and vegetables. The people subsisted mainly on cereals. The incidence of disease was high. In general, a very low standard of living prevailed in the community.

In contrast with his material impoverishment, the fellah (cultivator of the soil) of Al-Manayel was rich in the possession of certain fine personality traits and in being a member of an integrated community. He was observed to be highly socialized, contented, humane, and patient. With great industry he applied himself to cultivating the soil, working hard for long hours. He was conscious of his community identity, gaining a sense of strength and stability from its long history and deep-rooted traditions. Despite the difficulties of his life, he manifested a well-developed sense of humor. His devotion to his children was strong.

The first promising step taken by the association was to select for the job a qualified young man, with rural background, college training, and special training in social work. He was entrusted with the attainment of the over-all objective of creating among the villagers the desire to better their conditions and to help them in fulfilling this desire. This was to be done within the means and the cultural pattern of the community, and on the basis of cooperation, education, and guidance. It was meant to be a development from within, dependent mainly upon the desire of the people and upon their effort.

During the first few weeks of his assignment, the agent spent most of his time in getting acquainted with the people and with the conditions of the community. He strove to understand its pattern of organization, especially with regard to leadership and to relations with government provincial officials. At the same time he tried to explain to the people the reason for his coming to their village. They were suspicious, as they were not sure he was not another official coming to them to collect taxes, to impose fines, or to inform on their doings. The fact that he chose to rent a house in the village and live with them as a regular member of the community helped much in winning their confidence.

The agent's next move was to help the people satisfy one of their felt needs, that of having better care for pregnant women and for babies. The community provided a house to be used as a maternity and child-welfare center, and the authorities at Cairo supplied the services of a visiting nurse. In addition to helping women and children in health matters, this nurse strove to introduce improvements in various aspects of homemaking. She also began to train some of the young women to be efficient midwives. The women of the community were completely won over, as a result of this initial project.

About the same time, the agent had prepared the community for another step, the establishment of a field clinic in the village. The equipment and the services of a doctor were supplied by the Ministry of Health. Through the clinic the people were offered urgently needed medical services. Never before had they been treated like this by the central Government.

The villagers were now ready to accept the idea of a social center. They provided another house for this purpose, and had it equipped with simple furniture and a radio. The people began to gather there in the evenings to listen to the radio, to visit, and to discuss problems and projects.

One of the problems that one day was brought to the attention of the agent was the heavy fine imposed upon the parents of children who did not show up at school in the neighboring village. For several evenings the discussion was directed in such a way as to bring out the value of learning and to emphasize the need of the village for a school of its own.

This approach bore fruit in the form of a petition for a school, signed (mostly by thumb mark) by every father in the village. The agent forwarded the petition with his recommendation to the proper authorities in Cairo. A school was promised through the governor of the province on condition that the community supply the site.

This proved to be quite a problem. The village proper was too crowded, and every foot of its land was under intensive cultivation. The precious soil could not be wasted. Such was the hard economic reality. It took some time before the villagers came to the conclusion that the best solution was for them to utilize the large pond next to the village if they could find the way to fill it up with dirt. The agent suggested a complementary project of cleaning up the village streets and using the rubbish to fill up the pond. This was accepted, and work was begun on a cooperative basis under the supervision of a committee of elders.

Work progressed slowly, but the agent refrained from applying outside pressure. The governor felt differently. He believed that the matter needed a push. In accordance with the usual practice he ordered the police officer to make the people finish the job fast. Forced labor was imposed for 1 day. Men and animals were brought from the fields by police and put to work at the project. The people were angry at this kind of treatment. The agent saved the situation by phoning authorities in Cairo, who issued orders to the police to withdraw.

This incident did much damage to the morale of the community and to the cooperative improvement program the agent had been expanding. Finally all concerned, including the governor, entered into an agreement to have the job done on a voluntary basis. He offered the village the services of a truck, which helped much in hastening the work. In a few weeks the site was prepared, and 15 months after the beginning of the project, Al-Manayel had its first school.

Utilizing similar techniques, and covering similar difficulties, the agent, other workers associated with him, and the central authorities concerned succeeded in stimulating and guiding the village to move itself forward one step after another. The school was gradually developed into a dynamic center for the training of village children, boys and girls. In addition to regular course work, training was provided in handicrafts and in agriculture. Recreational activities were encouraged. A cooperative society was organized and began to function successfully. The cooperative council, well selected and trained to manage the affairs of the society, gradually developed into the recognized village council. That was a case of local leadership developed from within. The habit of drinking contaminated water from the irrigation ditch was replaced by the practice of pumping water from protected wells.

Al-Manayel is well on its way of progressive development. It is serving Egypt as a model for similar improvements in other rural communities. In its story we find clearly demonstrated the superiority of the extension educational technique over the prevailing practice of effecting improvements in rural life by orders and regulations from above. We also observe the important role played by the pattern of local culture in a program involving social and technical change.

COMMITTEE MEMBERS: Afif I. Tannous, Office of Foreign Agricultural Relations, United States Department of Agriculture, Chairman; Frances H. Baker, Division of International Press and Publications, Middle East Section, Department of State; R. E. Buchanan, Iowa State College, Ames; Mrs. Lydia Ann Lynde, Extension Service, United States Department of Agriculture; John Edwin Marsh, The Middle East Institute, Washington, D. C.; Dr. Z. A. Shakhashiri, American University, Beirut, Lebanon; Mohamed M. Shalaby, The Egyptian Ministry of Education, Cairo, Egypt.

Eastern Asia

China, Japan, and Korea

Eastern Asia is understood to comprise China, Japan, and Korea. Most of those serving on the Committee for Eastern Asia have actually taken part in agricultural programs in these countries for rather extended periods since the Second World War, either as members of a mission or as agricultural officers.

This particular region is undergoing drastic changes in its political and economic policies. Conditions are far from normal, and changes will undoubtedly be taking place for some time. Moreover, many of the areas in this region are much more isolated because of lack of transportation and communications and of local customs than are most other countries. This isolation may seriously affect future agricultural activities. Food production, and practices that will increase food production, will remain the first consideration of the people in this area, and the increasing population will continue to accentuate this need. A useful and appropriate approach to the problem of bringing the extension type of education to these people is to consider what such education can do within the means of the farm people to meet locally felt needs.

The committee has limited its discussions to a few of the more serious problems in each country. The problems chosen are those most likely to appeal to the people and, therefore, most likely to make an effective approach to extension work successful in motivating the people and persuading them to accept a new method.

This region is recognized to have relatively little fertile new land that may be brought into cultivation to increase production. Land use at present, except perhaps in isolated spots and on the steepest hillsides, is generally intensive. Fairly good rotations are practiced in many places and organic matter is carefully returned to the soil in perhaps greater amounts than in any other area in the world. Technical people recognize, however, that many improved practices can still be introduced and utilized to make a better economy for the farmer and his family. The bringing of these practices or their results to the farm family is ample justification for encouraging extension service programs.

In this region there is definitely a need to convince the governments and educational authorities of the dignity of agriculture as a profession and to convince high government officials of the importance of an agricultural program that in benefiting the farmer will benefit the nation. Too often the vast gap between the technician, with his advanced knowledge, and the farmer, with his need and limited resources, is hard to bridge. This is the proper field for the extension worker. It is with these thoughts in mind that the Committee for Eastern Asia submits statements concerning extension work in these areas.

China

Those familiar with the situation in China recognize that many of the factors that must be dealt with, because they have a determining influence on agriculture and rural life, do not come within the realm of extension activities. In this category one might include such things as taxation, land reform, education, transportation, international trade agreements, political changes, and many others.

Many factors also that might well be included in any comprehensive nation-wide program are of such nature that they require action on a national or provincial basis, and these may need a longer time for development and demonstration or utilization.

Then there are more immediate factors that can be dealt with on an individual or small-group basis. These include practices on which we have practical or scientific information, and which, when demonstrated in a simple, effective way, will give immediate results, and will be understood and appreciated by individual farmers.

The first category is omitted as not coming within the scope of this report. A fairly comprehensive list falling under the second and third categories follows.

The Committee believes that a discussion of some personnel, organization, and administrative problems in China should precede the treatment of specific technical problems. One of the greatest overall problems that affect improvement of agricultural and rural life in China is the fragmentary and uncorrelated nature of the effort in this direction to date. A great "mothering" agency is essential to nurture, through a professional government agency, the local and more specific activities and programs constituting the total of extension work. The first and second sections that follow therefore deal with extension organization and administration and with personnel and training. The third section lists 14 more specific extension problems, and 4 of the more immediate and tangible ones are developed in detail.

Problems relating to organization and administration of extension work

Success of extension work or related agricultural approaches depends on efficient organization and administration. A sound structure for extension work should grow organically within the framework of each country's culture; it cannot be forced or imposed by a ready-made pattern. Furthermore, organization and administration are not ends in themselves, but means to serving the people and implementing action programs to meet the needs.

In view of the general agricultural conditions in China and the prevailing poverty of Chinese farmers, we deem it necessary to indicate a few major problems resulting from unsound organization and rather weak administration. These problems are:

Lack of concrete, effective local or grass-root operation.

Giving undue emphasis to the overhead structure.

Lack of sufficient research facilities and of proper coordination between extension teaching and research.

Lack of adequate budgetary provision for extension work.

Lack of proper coordination with existing institutions and agencies engaged in rural reconstruction work of different kinds.

The following extension approaches are suggested to provide solutions for these problems:

Strengthening the hsien (county) office by utilizing the market-town areas as basic units for conducting extension programs.

The market town is a trading center which serves from 12 to 20 farm villages within a radius of 20 to 30 square miles. Farmers of these villages come into the market town 3 to 5 days a week to do their selling and buying and to make social calls on their friends and relatives. A market town could serve as a nerve center for disseminating information and for introducing new ideas. Culturally speaking, a market town could attract people of the same class having the same kind of mind to cooperate in certain common projects that would result in good to all.

It is proposed that the hsien office of extension work should utilize this natural social grouping to its fullest extent by assigning its servicing personnel to a number of market-town areas. These servicing personnel should live and work in those areas. On market days they could receive farmers in groups, using all available media for extension teaching. On other days, they could visit the villagers and conduct demonstrations in their fields or homes. Confidence of the villagers in the extension workers will grow in direct ratio to the intimacy of social contacts. Good results could be expected as the extension workers show the villagers, through the different educational processes of persuasion and suggestion, how to do new things and change their ideas on what should be done and what could be modified. Through these relationships with the villagers on the grass-roots level and by establishing friendly relations with village elders and local political leaders, extension workers could make programs of different kinds really effective and could get them accepted by the people with their full support. It is proposed, therefore, that the market-town areas be established as natural points of contact, a clearing house for all information relating to extension work.

On a level above the market town, the Committee suggests that although the hsien extension office may maintain its work headquarters near the magistrate, its administrative center should be established in close proximity to its numerous branches scattered in different market towns. The idea is to make the basic units of extension mobile not only in a physical but in a functional sense. The number of personnel required for these basic units is of great importance. No definite suggestion will be proposed here, but it would be most desirable if the corps of extension personnel, usually concentrated in the provincial and national headquarters and having too much paper work and too little field experience, should be made available on call from the hsien extension office.

Reducing the overhead of provincial and national headquarters

In the first place, we propose that as far as the organization and administration of the provincial extension office is concerned, the number of employees engaged in administrative and office work should be reduced to a minimum. On the other hand, all possible effort should be spent to maintain a corps of subject-matter specialists whose main concern is to collect information, to analyze problems, and to supervise program making for the improvement and development of rural welfare in that particular province. The number of personnel in the provincial headquarters is to be determined on the basis of population on farms, the types of problems or needs prevailing, and the province's degree of agricultural diversity. Supervision on the provincial level should be left to the provincial office of extension.

Our second suggestion deals with the national headquarters. It was felt that in view of the shortage of funds for extension programs, and by virtue of the real contribution of extension work to rural life, the number of administrative officials should also be reduced to a minimum and the number of provincial subject-matter specialists should be increased in proportion to the demands of the different provinces.

These subject-matter specialists should maintain close contacts with different research institutions. Their main duties would be to collect information, analyze national problems, develop teaching methods and materials, coordinate field and regional work, and conduct field studies and training. Subject-matter specialists at national headquarters also should have direct access to research institutions, and should keep in close contact with the subject-matter specialists in different provincial offices. No less than three-fifths of their time should be spent in regional visits. Different regional offices may be established where a number of specialists would be assigned. Their assignment will be determined according to the demands of the different provinces and the field of specialization in which the people need help. National headquarters should be responsible for coordination of all public and private agencies engaged in extension work of different kinds, and it should also be responsible for providing appropriations for the provincial and hsien offices.

Our main emphasis is on the grass-roots operation of extension work. It is only by means of direct contacts with the farming people, teaching and also learning from them, that best results can be achieved. We suggest that a certain degree of decentralization would be highly desirable if an organization of extension is to function effectively. Agricultural diversities in China, coupled with her inadequacy of communication and transportation, compel her to take extreme care in developing a kind of extension system that could concentrate all her limited resources into a small number of pilot projects to demonstrate the value of certain new methods and new practices.

Integrating extension teaching with research

The relationship of extension teaching to research is another matter that needs special emphasis. Agricultural extension is based on facts, not on fancies or mere guesswork. No extension program is useful and practical unless it is based on facts that are obtained from studies, experiments, research, and often from practical experiences of local successful farmers. Research expressed in its simplest terms is a fact-finding and problem-solving process. Extension teaching, therefore, should be closely related to research institutions. All research workers in the field of agriculture and rural life should accept the responsibility of making their discoveries known to extension workers. All extension workers, especially the subject-matter specialists, should keep themselves closely in touch with the latest developments in their own fields of specialization.

Although the importance of strengthening research institutions is realized, nevertheless it is advisable to proceed with great care and not to take on too ambitious a scheme that would strain limited resources. Simple extension programs can proceed even before an elaborate research system is perfected. Indeed, it would be advantageous to make full use of all the existing facilities, and to give those responsible for them all necessary encouragement and support, thus enabling them to enter into partnerships of different kinds, increase efficiency, and eliminate all unnecessary duplication of effort.

Increasing reliance on local resources for support

The provision of an annual budget sufficient to carry out extension work in a big country like China is indeed an educational enterprise of no small magnitude. One important principle is to concentrate all resources for limited pilot projects in a few carefully selected areas. Though both the national and provincial offices are supposed to help the hsien through annual appropriations, we like to stress the elements of partnership involved in the cooperative nature of this particular educational system. We suggest, therefore, that all possible encouragement should be given to heavy reliance on local resources and on local cooperation. Particularly on the hsien level, attention should be given to soliciting all possible local support. Funds raised in hsien and local committees should go directly into meeting the needs of the numerous market-town projects. When taxes are on the hsien level, the people should be assured that the money will return to them in the form of better facilities, more provision of personnel for field operation, and other benefits. We are convinced that Chinese farmers, however poor, would be willing to do all they could to support a program that would give them immediate returns to satisfy their needs.

Strengthening and cooperating with existing private agencies engaged in rural work

In connection with strengthening existing facilities, the Committee further suggests that increasing reliance should be put on private agencies. The contributions of such agencies toward rural reconstruction in China are notable. No list of contributors is necessary. All private institutions, such as missionary stations, churches, private colleges and universities, and nongovernmental institutions for agricultural research and adult education should be induced to take part in the testing of all kinds of educational efforts to help people to help themselves. Friendly cooperation is the key to making all extension programs effective and successful.

Finally, we suggest that proper channels should be created to facilitate international cooperation and to make proper use of foreign support. Foreign support anticipated should include only technical knowledge or know-how. Though cooperation through certain established agencies may avoid unnecessary political and legal complications, it still should be possible to explore other new, more dependable, and often more efficient outlets through which outside funds can be used to meet fully the specific purposes for which such contributions are intended.

Personnel and training

One of China's agricultural extension problems is the shortage of field workers who actually deal with the farmers. Most of the hsien extension offices are filled with people who have no training for the work and no inclination to work with farm people. They may not even know much about agriculture and rural life in the district. People of this kind cannot be expected to do the best job in agricultural extension.

Another personnel problem is the shortage of subject-matter specialists. If there had been more specialists, the unqualified hsien workers could have been helped by them and some result could have been obtained. Though there are a number of specialists in the agricultural experiment stations, very few of them have any training for extension work or interest in it. Therefore, specially trained extension subject-matter specialists are greatly needed.

These problems can, of course, be solved by carrying out a large-scale training program. But in undertaking this type of training one finds that there is not much practical or usable experience on which training can be based. One cannot use merely theoretical material for training people who will have to do practical work.

Personnel must be trained, however, and therefore a training program must be started as soon as possible. Following are a few important principles by which the training program should be guided:

1. The trainees must be boys and girls of farm families. People who have actual experience in farming and in rural life as a whole and who are conscious of the agricultural and rural problems of their native districts are better qualified for such training. Of course these people must also have adequate education. Here no doubt secondary education would be enough.

2. The training must be comprehensive, and so sufficient time should be given to it. Some people think that 1 year, or even 6 months, may be enough. This would of course depend on how much education the trainees have already had and what kind. If trainees are graduates of an agricultural vocational school or have had some years' work in an agricultural college, the period can be shortened to 1 year or 6 months. But if they have had only secondary education, then 2 years will be needed.

3. A special environment in the training school would be very desirable. The trainees are not merely to learn technique and facts. It is just as important that they receive the particular inspiration without which they will not have the genuine interest in the rural people's way of life or the zeal or sincerity for helping them. The campus environment in many of the colleges has an influence that weakens the trainees' desire to go back to the countryside. After living at the college several years, many of them would be likely to have acquired tastes that would make them repudiate country life or subject them to the temptations of city pleasures.

4. Trainees must be assured that if they have satisfactory records they will have the job for which they have been trained. This assurance is one of the incentives that motivate young people to undertake training. If they are sure of employment they will study wholeheartedly.

5. Extension leaders in the national and provincial offices should know the extension work of foreign countries by observation and experience, but local personnel should be trained in China. The money spent for sending one person to the United States would be quite sufficient for training 10 or even 20 students in China. And at present the personnel most needed in China's agricultural extension are middle-level supervisors, subject-matter specialists, and field workers.

All these people can be well trained in China, or it might be feasible to have several experienced extension workers from the United States come to China to help in the training.

6. All the outstanding agricultural colleges, schools, experiment stations, and other agricultural improvement organizations, public and private, should be mobilized for this training work. When necessary they should be subsidized and helped with technique and personnel. But let it be repeated that on the college campus a special place with a special environment should be provided.

7. An outline of the subject matter to be used in training follows:

a. Important problems on farms, in homes, and in rural communities.

b. An over-all view of the extension service background, objectives, extension philosophy, and organization structure.

c. A general discussion of the duties and responsibilities of extension agents, designed to broaden their vision of opportunities for service in their new work.

d. The agencies to use and the procedure to follow in developing the extension program of work.

e. Extension methods, or devices, used in formulating programs with the people and putting them into effect.

f. The extension office and its management.

g. Cultural patterns and their value in doing extension work.

h. Junior club work.

i. Relationships with other organizations and agencies.

j. Visual aids, how to make and use them.

k. Reports, and measuring results.

8. In-service training must be fully employed. It is economical and also practical. Such training is especially suited to China's present situation, because we need to put trainees into service as soon as possible and also because extension work in China is relatively undeveloped. New problems arise every day, new experience is needed. The young worker needs frequent assistance from his senior associates or superiors.

The Committee points out that the full realization of the objectives relating to personnel and training can be assured only if: (a) The Government or the extension officers at different levels will employ persons who have had training; (b) there is a system whereby extension people, high and low, can enjoy some social prestige; (c) these people are given reasonable economic or professional security; and (d) most of the trained persons are assured that they will be employed in the right positions according to their qualifications.

Agricultural extension programs

Major problems that extension in China could help to solve concern: (1) Improved seeds and breeding stock, (2) fertilization, (3) irrigation and drainage, (4) insect and pest control, (5) farm equipment, (6) marketing, (7) farm credit, (8) land reform, (9) housing and sanitation, (10) fuel crops, (11) fish production, (12) youth work, (13) small industries, and (14) community organization.

Four of the more immediate and tangible problems whose solution the Committee believed should be stressed in an agricultural extension program relate to: (1) Improved seeds and breeding stock, (2) fertilization, (3) insect and plant-disease control, and (4) irrigation and drainage. These problems are recognized by the Chinese farmer. For this reason they could be made the starting point for active extension programs whose benefits could easily be demonstrated to him. At the same time they would strengthen the local technician's confidence in his ability to develop the programs further. Each of the foregoing problems is discussed at greater length under its respective heading, as follows:

Improved seeds and breeding stock.—Increased production of all the basic farm products depends primarily upon the availability and maximum use of the best possible seeds and breeding stock. An excellent foundation for accomplishing this has been laid, such as the work in cotton and seed-wheat improvement. Expansion of this program for developing, multiplying, and disseminating improved strains of seeds and farm animals in all parts of China is basic and imperative. This must include programs for keeping up the quality of the product as it moves in the normal channels of trade and processing to the consumer.

In most of China the present practice is to use for planting purposes seeds of the locally grown crop. These are usually badly mixed strains of native stock of inferior character. To start replacing them with superior strains will produce more products of better quality than will the locally grown strains under the same conditions. This demonstration must be carefully planned and supervised by a reasonably well-trained local extension worker or leader, who will see to it that the local authorities and recognized leaders of the community (hsiang chang and pao chang or village elder), the local government (hsien magistrate), and the church, see and understand the advantages to the cultivators and the community of widespread adoption of the superior strains.

Next a multiplication block must be planted on local farms of sufficient size to furnish all the planting seed needed in the area in the next year, with an adequate reserve for emergencies. Superior seed from this multiplication block must then be made available to all the cultivators of this market-town area in exchange for the old seed they would normally plant.

Instructions for properly planting and caring for the crop from the superior strain must be given to all the cultivators. They must also have available at reasonable cost any insecticides or pesticides needed to protect the growing crop, with instructions and demonstrations they can understand on how to use them most effectively.

The matured crop must be harvested so as to protect its superior qualities, and the cultivator must be guaranteed that he will receive a price for his superior product fully reflecting its quality as compared with the local inferior strains formerly grown. Without this clear-cut economic advantage to the individual cultivator, no plan for making a change from an inferior local strain to an improved strain developed by the research organization could be expected to appeal to the mass of local cultivators and adopted by them.

A similar plan adapted to any crop or livestock enterprise can be made to replace present inferior stock.

Fertilization.—For maximum production of even superior strains of seeds, all practical means of fertilization must be fully used. This must depend primarily on the maximum efficient use of all available local vegetable, animal, or other wastes.

Every possible method of using night soil, animal manures, and various forms of compost, singly or in combination, in the most effective and efficient manner possible must be developed and widely used. This will depend largely on extension education and promotion.

In addition, extension should encourage the maximum use of animal bones to be ground into a form useful as fertilizer, either raw, steamed, or otherwise treated or supplemented.

Wherever any ordinary commercial fertilizer is economically available, extension should take the lead in educational work designed to assure its most efficient use. The full development of all known deposits of fertilizer materials should also be encouraged and promoted.

Insect and plant-disease control.—

PRESENT PRACTICES

For the country as a whole there are no organized pest-control practices. It is true in many communities farmers use some native insecticidal plants available locally. In some localities derris root can be found and used as an insecticide, and a short distance away there may be no derris, but thunder-god-vine or some other plant is utilized for insect control. Such methods as hand picking of eggs and insects, digging and destroying locust eggs, trenching for locusts, duck feeding, flooding rice paddies to kill overwintering insect larvae, frequent "turning" and sunning of stored grain to control insects all are practiced to some degree.

Extension work in insect and plant-disease control has been carried on by the following institutions: (1) The National Agricultural Extension Commission, which has made a good start in a few localities under United Nations Relief and Rehabilitation Administration and Food and Agriculture Organization guidance. Because of lack of funds, however, they do not, and cannot, carry on extensive work. (2) The National Pesticides Plant (financed by sale of products), which has done work in limited areas, mainly among the vegetable growers near the large cities. (3) The Cotton Improvement Bureau (financed by cotton mills), which has encouraged insect control among its cotton growers. (4) Commercial companies. (5) Missionaries who have carried on well-organized work in many small communities.

Obstacles to improvement are:

> Lack of interest on the part of Ministry of Agriculture personnel and the public in general to raise the standards of rural people who make up 80 percent of the population.
>
> The illiteracy of the general population, especially the peasants. Eighty-five percent cannot read or write.

Fear and suspicion among the country people of government workers. For many generations, the only reason that government officials have visited the farmers has been to take away their grain and livestock for taxes and the military.

Lack of transportation except for footpaths, rivers, and canals.

Superstition among the people, especially the farmers.

The reluctance of the educated Chinese to go out into the country and demonstrate their knowledge. In fact, knowledge is hoarded much the same as are material possessions.

Social institutions upon which to base further development are: (1) The NationalAgricultural Extension Commission (if activated), (2) National Pesticides Plant, (3) Cotton Improvement Bureau, (4) mission schools and colleges, and (5) China industrial cooperatives.

All the foregoing groups are organized to carry out specific advisory work, the best organized being the National Agricultural Extension Commission. The commission has an organization from the national level down through the provincial and the hsien level to the village poa chow (elder). With funds and properly trained field personnel willing to do field work this group could start immediately. The others are organized for special-crop work or in a special area.

In addition, certain commercial companies that have done excellent work in demonstrating the use of fertilizers to the Chinese are just beginning extension work on pesticides.

All the organizations have expressed a concern for change. The farmers express a concern after they once know there is such a thing as a better way to control insects and plant disease than they have used before. The sincerity of this concern is sometimes doubted, except for farmers who have had a chance to use insecticides, the Cotton and Tobacco Improvement Bureaus, certain trained Chinese at the upper operational levels (not political), and commercial companies.

As evidence of potential achievements, all the groups present an elaborate organizational chart, and most of the agencies mentioned have done some field work, the National Extension Commission probably the least of any.

EXTENSION APPROACHES

At present most of the farm demonstrations are conducted by nongovernmental or semiofficial organizations such as the Cotton Improvement Bureau and the Tobacco Improvement Bureau, China industrial cooperatives, and missions. In addition, a few missions hold fairs and exhibits and have demonstrated the hot-water method of treating seed. The National Pesticides Plant conducts demonstrations through its dealers as follows: For every 100 pounds of pesticides the dealer sells, he is given a certain amount for demonstration purposes. The National Agricultural Extension Commission has put on a few insect-control demonstrations, but they have not been too well received because of the government tinge. In China proper, the demonstration of pesticides has had a rather brief history, at most 10 years, and generally not more than 5.

In the limited areas where demonstrations have been used, they have been successful. However, they have usually been conducted near the cities among cotton and vegetable growers, who are in a financial position to buy insecticides.

The following additional extension approaches are believed to be feasible:

> Every effort should be made to raise the prestige and dignity of workers in the Ministry of Agriculture, and, in turn, to raise the living standard and status of the farmers. Farmers and agricultural workers are looked down upon.
>
> Emphasis should be placed on vocational training of young people from farms and villages who are willing to return and carry on extension work among farmers. Those who are sent abroad to get specialized training and to do graduate work in agriculture should be kept at the absolute minimum.
>
> Since a large percentage of the population (85 percent) cannot read or write, it is recommended that special emphasis be placed first upon demonstration and second upon visual-education means such as charts, posters, exhibits, fairs, and village dramatics.
>
> In China, where the farms are small, labor is abundant, and farmers have little ready cash for the purchase of pesticides and equipment, it is recommended that special emphasis be placed on control methods such as crop rotation, time of planting, clean-up methods, drainage and flooding of fields, selecting insect- and disease-resistant varieties of seed, trenching, duck feeding, and hand-picking.
>
> At first, demonstrations should be conducted with the utmost care, and crops and control measures selected that give spectacular results.
>
> The culture of the indigenous insecticidal plants of China such as derris and pyrethrum should be encouraged and, if necessary, subsidized by the Government.

Irrigation and drainage

A large proportion of the cultivated land of south China is irrigated, some of it under well-planned systems that have existed for 2,000 years. Some 15 percent of the cultivated land in north China is under irrigation. In the rice-growing regions, nearly 70 percent of the land is irrigated. In both the wheat and rice regions a more dependable supply of water is urgently needed. In general the larger district irrigation systems are well-planned and operated. On the individual farm, however, the lifting of the water from the stream to the land is largely done by human labor. In some sections of north China, improved types of animal-power pumps have been introduced for pumping from shallow wells. The farmers using such pumps are enthusiastic about them.

Many of the irrigation systems have been constructed with local capital, and many more could be so developed. Larger project development is also needed that would require government loans at a low rate of interest and be amortized over a long period of time. In some parts of China more wells could be dug and the pumping of water from rivers and streams could be greatly extended. The best methods of pumping on individual farms should be developed and extended. The lack of capital, animal power, fuel, improved pumps, and extension education are the chief obstacles to improvement.

Drainage needs are of several types. They include the improvement of (1) areas adjacent to large bodies of water and subject to continuous or frequent flooding; (2) higher lying areas that may be improved by proper drainage; and (3) control of rivers that flood croplands during rainy periods. Some alkali land may be reclaimed in the semiarid parts of north, northeast, and northwest China, where available water and favorable topography are found. Some of the low-lying marshy areas along the coast, now unproductive because of poor drainage and harmful accumulation of alkali salts, could be reclaimed.

Throughout most of the intensely cultivated areas of China, farmers in general are directly concerned with irrigation problems and recognize the need for irrigation. Evidence of such concern is seen among groups of farmers in many sections who have banded together to construct, operate, and maintain irrigation and drainage systems. Land-reclamation corporations have successfully drained and irrigated a considerable amount of land. The Land Reclamation Corporation in northern Kiangsu has successfully drained and irrigated a large area for the growing of cotton. In several parts of northeast China projects developed under Japanese direction have reclaimed appreciable areas of good riceland formerly considered worthless. In Formosa, the Japanese have developed excellent irrigation systems that have made large areas productive for the growing of rice and other crops.

The land-reclamation corporations are applying some types of educational approach. The various small, organized groups in farm-irrigation and drainage districts are examples of phases of extension or related educational approaches. Such methods have been very successful. Some provincial governments have also been actively promoting irrigation and drainage.

Because of the many aspects of irrigation, drainage, and similar conservation projects, an active extension program should be conducted in areas having specific problems. A well-organized extension service should provide qualified extension specialists in irrigation and drainage competent to advise farmers on the technical and organizational features of such problems. Working through the local county agency, such specialists could greatly assist farmers with the organization of irrigation and drainage cooperatives and the design, construction, development, and maintenance of smaller irrigation and drainage projects. Such specialists could also train and assist county agents in handling the irrigation problems of the individual farmer, by demonstrating improved methods of pumping that have proved in practice to be the most efficient under Chinese conditions.

Specific things about the culture that should be understood

Among the important cultural patterns that may handicap extension work and the deep-seated attitudes and traditions are the following: Superstition; loss of face; ancestor worship; religion, especially in relation to large families; village organization and village elders, with the farmers working out from this center; illiteracy; suspicion of government workers; frequent holidays and festivals. Before discussions are made as to what problems to undertake and how to approach them, these patterns, attitudes, and traditions should be thoroughly studied and understood. Local plans should take these fully into consideration.

Japan

Many changes have taken place in Japanese agricultural education and research since the 1944 Conference (*9*). American agriculturists have studied food production in relation to the requirements of the country, the adequacy of existing research and education, including their contributions to farm life, and crop production. Various remedial measures have been taken, including the enactment of enabling legislation, to effect coordination in research between national and prefectural governments and to establish a cooperative extension system with all the units of government participating. The statements that follow explain the major situation upon which these measures were based and give a projection of the results expected. A general analysis of extension as it might apply to Japan is also given.

The Government assumed seemingly endless controls over agriculture—farmers, education, and research—and the gap between the farmer and his problems and the educational effort was wide. Furthermore, education was intertwined with regulations and management. The farmer came to mistrust the Government; the Government assumed greater controls. Government workers maintained an attitude of superiority. The farmer was given information confused with directives. He did not become a partner with the agents of the Government. Practically no attention was given to home or youth situations. Soon after the close of the recent war, Ministry of Agriculture officials proposed to establish 2,200 extension farms. A careful examination revealed that these farms would be largely an extension of the experiment stations, would benefit only a few farmers, and would be excessively expensive. The proposal was therefore not approved.

Although the number of tax-supported institutions doing research is large (fully as many as in the United States), medieval agriculture still remains in the midst of modern railroads, electric power, and chemical manufacture. Some of the fault lies in the quality of the research itself. Improvement is needed in the future to transform this research into practical usefulness. The research workers, like nearly all other agricultural "experts" and their teachers, grew up in the cities, have had little or no farm experience, and are obsessed with the dignity and exclusiveness which they assume is inherent in their special calling. Even the Ministry of Agriculture, Norinsho, was manned chiefly by lawyers.

Research in sericulture has been of a higher quality and better utilized than that in any other field. Plant breeding with rice, wheat, and barley is often cited as being effective, often resulting in 100-percent increase, particularly as a result of disease-resistant plant breeding, but diseases that might be practically eliminated by a modern breeding program are widespread and continue to do serious damage every year. A similar statement could be made regarding insect control, although methods of control have been developed but are not fully used. For instance, insects reduced the 1948 rice crop an estimated 20 percent and practically ruined the cabbage crop. Many similar illustrations could be given. On the other hand, the result of applied research to silk production has increased yields 500 percent. Apparently an extension service capable of carrying the research results to the farm level and proper demonstration of the value of improved methods and practices would result in increased production and more respect for research accomplishment to the mutual benefit of the farmer and the technician.

The new extension system

Since the existing research-extension system appeared decidedly inadequate for giving marked assistance in improving either the food situation in Japan or the status of the Japanese farm family, a new system of extension was developed by the Occupation in cooperation with leading Japanese agriculturists. The over-all organization was established by national laws passed July 5, 1948. A serious attempt was made to embody in the new system the best features of extension in other countries and to make adaptations needed for the special conditions existing in Japan.

The salient features of this new pattern may be summarized as follows:

> Dissemination and exchange among farmers of useful, impartial, and practical information on subjects related to agriculture, in order to develop more efficient farming methods, increase agricultural production, and improve farm living conditions is set forth as a national policy.
>
> Extension is a part of the National Agricultural Improvement Bureau, which is on a level with research and under the same administration.
>
> Responsibility is shared with the prefectural (Ken) governments and the local-area extension units, the national Government supplying only technical assistance with methods and information.
>
> The Ken experiment station is also the center of extension. The research workers, where practicable, are identified with extension. This is intended to help correct the isolation of research from farm problems.
>
> Each prefectural experiment station and extension organization has an advisory committee, with farmer members being in the majority. This is to minimize direct political control such as had been universal. For instance, it was common practice to transfer directors often, yearly in many cases, and scientists without their consent. The committee advises on matters of policy, programs, and finances.
>
> Areas for local farm, home, and youth agents are not political units, but districts defined by practical considerations for most effective operation.
>
> Homemaking and youth work are an integral part of the farm advisory service and on the same level with it.

> Farmer committees serve in an advisory capacity within each area and select agents from an approved list supplied by the Ken director.
>
> Provision is made for maximum participation by farm people. The programs are not superimposed but are developed from farm problems.

By April 1949, a year after the initial organization efforts, the new system had been established widely. At that time 42 of the 46 Kens had established agricultural-improvement committees, 26 had passed cooperating laws, 31 had appointed directors, 2,709 local-area committees had been selected, and 5,299 farm advisers were busy in the field.

Origin of the new extension pattern.—The extent to which the new extension program is superimposed should be examined. In the first place the all-inclusive state-control system, developed in the main during the long war preparation and operation period, had to be eliminated to give any seeds of democracy a chance to grow. Former oppressive measures had made farmers and nonpolitical agriculturists skeptical and distrustful of government. The vacuum had to be filled. Farmers and their friends were uncertain about what would satisfy their wants or how improvement could be made. Food shortages became exceedingly critical during the last years of the war. Few people seemed to wish or believe it possible to continue to obtain food from the United States to meet the 20- to 25-percent deficiency in Japanese nutritional requirements. All these factors appear to have created an atmosphere favorable for new ideas, a feeling that the old had led people into serious troubles they had not foreseen.

After consultations with farmers in various parts of Japan and many conferences with agricultural workers in the experiment stations and universities and with government administrators, it seemed clear that extension could be established as an educational system planned to show farmers how to help themselves. Acceptance grew in direct proportion to the understanding of a service concept. The interest of government officials was proportional to their association with farmers.

Groups of leaders were chosen, mainly by the Japanese, for consultation and drafting of the new pattern, which resulted in an extension system on a country-wide basis.

Eagerness for youth and home extension.—It came as a surprise that farm people place youth work first in importance, home work second, and farm improvement last in their planning for extension. The young people are confused, unsettled, and uncertain about the future. Parents pointed out that undesirable organization of young people has been taking place under various subterfuges.

Women have been expressing themselves in the extension organization meetings with unprecedented frankness. They consider their lot too hard and the limitations too great for wholesome living, including the cultural phases they prize so highly.

This is an all-too-brief indication of the eagerness for extension work in the family phases of farm life. The opportunity is unprecedented, but the difficulties in meeting the need are also very great. Trained leaders are few. The concepts of working with people on their practical, everyday problems are crude or nonexistent. Yet there are many potential leaders who, given the opportunity, encouragement, and instruction, will succeed.

Objectives of an extension program.—Agricultural extension in Japan is needed to increase food production, to improve farm living conditions, and to give agriculture the importance it deserves in the Japanese economy. The introduction of new and improved crop varieties, utilization of wastelands, more effective use of fertilizers, better control of water for irrigation drainage, and the establishment of crop rotation systems will appreciably increase yields. Two of the greatest benefits from extension could come through better control of diseases and insects and the preservation of foods, both of which would decrease the enormous crop losses now common. Improved farm living will result from the increased yields and also from the availability of more actual food that will follow better conservation and processing. Certain improvements in farm machinery and tools are now practicable without bringing about radical changes in farm patterns. Health and sanitation will benefit when the people have a better diet and changes are made in prevailing practices of food preparation and disposal of waste.

There is a great loss of potatoes and especially of sweetpotatoes after harvest. Potatoes are handled several times, frequently with shovels, which results in many bruises and subsequent damage or total loss. Not only is it necessary to market sweetpotatoes quickly, but they must be consumed soon after purchase. This practice results in a glutted market with low prices to the farmer and a surfeit of sweetpotatoes for a time, followed by a scarcity by early winter. Better methods of production and handling are known, but they have not been presented to many farmers.

Much progress has been made by a few research stations in developing disease-resistant varieties of rice, wheat, and other crops. Use of these varieties will increase yields in communities now disease-ridden. Demonstration is needed to obtain more widespread introduction of the resistant varieties.

There are many areas—particularly throughout Hokkaido, and along streams and at high altitudes in the other islands—of sandy-loam and of clay-loam soils that are in coarse grasses and shrubby growth of little value as forage. In some places, particularly near streams or along seashores, there are sands or very sandy soils also not in crops. There is evidence that suitable forage or pasture plants adapted to these varying soil and climatic conditions can be grown in these areas. Their introduction on a wide scale would permit utilization of much of the "wild lands" for livestock feed. However, almost no understanding of food-crop production exists.

Crop rotations, in general, are not common in Japan, and continuous planting to one crop or to a closely related crop may result not only in soil depletion but in increased disease and insect hazards. For instance, much of the riceland from Tokyo west and south is planted to wheat or barley each winter. Although this practice is largely unavoidable, some riceland could be used for winter legumes. Suitable crop rotations for upland areas should not be difficult to work out.

Supplies of chemical-fertilizer materials are so low that maximum crop production is not generally possible. The Japanese economy will not at present permit purchase of sufficient fertilizer from the outside, and the domestic production of nitrogen fertilizer is still too low. It is essential that more of the information now available on use of chemical fertilizers be carried to the farmers.

Although available labor is abundant, improvements in farm machinery and hand tools will increase the effectiveness of that labor and result in greater crop yields and less loss at harvest. Most of the rice crop is harvested with a hand sickle and threshed with a flair or small foot-operated thresher. Plows, harrows, and other soil-turning equipment could be improved, and requests have been made for such equipment from the United States. Small fields throughout the country, except in Hokkaido, must forgo the use of tractors, except garden size, and of planters and similar machines unless there are major adjustments upward in size of fields. Community service of small tractors is possible for quickly converting rice paddies into winter grain fields by leveling dikes, soil preparation, and possibly ridging the soil for grain rows. Garden tractors, powered by electricity, could be operated on a community basis for preparing and cultivating the small fields near homes or power lines. Wider use of electrically powered threshers for rice and other grain is quite feasible. The use of power equipment and better hand tools will release many women from the fields. These women can then devote more attention to the home, especially to the preparation and preservation of food. This will be especially true if and when more electric power is available and goods are manufactured so that they can be exchanged for oil.

Improvement of farm living conditions is possible without changing radically the Japanese way of farm life. Although most farm homes have electricity, such articles as electric refrigerators and washing machines, electric motors, and similar equipment are beyond the means of practically all farm families. Improvement in lighting is possible in most homes and will probably be made.

Improvement in the diet of the Japanese farm family will result from wider use of vegetables and fruits, and of cereals other than rice. Rice has been the principal food of the oriental for many centuries. Other foods are really supplemental. Extension workers could make an actual contribution to the diet by assisting in the promotion of fruit and vegetable canning and also by encouraging greater production of rice through improved seed and other farm practices. On many farms milk cows are the only work stock, and the yield of milk is low. Improvement of this stock through better breeding and feeding will increase the production of milk and also the draft value of the animals.

Japanese home gardens seldom have succession plantings of the vegetables that can be grown during much of the long growing seasons. The general practice of only one planting results in a surplus of a particular vegetable for a shorter period, followed by a scarcity or almost complete absence of that vegetable later. The adoption of succession plantings for certain vegetables will add greatly to the diet of farm and village families.

Almost the only common means the Japanese have for preserving foods is sun-drying. The people know little about canning, although fruit jars or even tin cans probably can be obtained at reasonable cost. Crops such as sweetpotatoes, squash, eggplant, turnips, peas, beans, and many other vegetables are dried, probably with loss of much food value and considerable palatability. Radishes and some other vegetables, as well as fruits, are dried and pickled. Vegetables much needed in the winter diet, such as tomatoes, are not saved. Limited information indicates that many Japanese farm, village, and other families would accept canning as a means of adding more or better foods to their diet. Japanese home demonstration agents could assist farm and village women in food-preservation methods.

A few Japanese farm families maintain a high level of living that compares favorably with that of many in the United States. Home demonstration in methods of preparation and use of foods and better home management will lift the average level of farm living considerably without an additional burden on the family.

Little information on health and sanitation has reached farm families in usable form. Utilization as fertilizer of all human and animal wastes is essential, but the possibilities are many for improving the methods of preserving such materials and of applying them to crops. The use of insecticides, the protection of food from insect and other contamination, and the more careful handling of prepared foods are largely matters of demonstration, so that the farm wife will understand and follow. Primary instruction in health and sanitation on the farm is a much-needed means of enabling the family to improve living conditions at little expense for materials or equipment.

Most villages have open running water along the main street. Water could be piped to many village and farm homes for domestic use with little initial or later outlay. Extension agents could help village and farm dwellers plan installation of systems for running water.

For centuries the Japanese farm has been considered as simply "a source of rice, taxes, and soldiers." Under the almost feudal type of land tenure, the philosophy of the Government has been to use, not to serve the farmer. Industry has been operated by the Government or subsidized through it. The farmer has expected nearly everything to be taken from him and little or almost nothing given to him in return for his labor or crop. Nearly half of the population is engaged in agriculture, but little recognition has been given the farmer's place in the nation's society. There also has been a wide gap between farm and urban people. When Japan as a whole recognizes the farmer as a citizen on the same plane with the artisan and other private or government worker, and also realizes that the farm home is equal in importance to the urban home, then—and not until then—will agriculture reach its rightful place.

An indirect effect of extension may be expected to have an important bearing on Japanese economy. Up to the present. industrialists and the Government have not considered the farmer as a consumer of manufactured products. With over 50-percent urban population, outlets for industrial goods are urgently needed, and attention has been given largely to exports. The improvement of the farmers' position will result in an expanding market for farm equipment and household goods that could well become the most valuable industrial outlet. Extension has a responsibility for making these possibilities clear to the urban people, possibilities that should repay their tax investment many times.

Land reform and reclamation

The land-reform and land-reclamation activities now under way in Japan have created additional needs for technical advisory services. Approximately 2 million farmers who were tenants wholly or in part have now become owners of the land they operate. The original objectives of the land-reform program will be attained only to the extent that farmer-tenants will become and remain successful owner-operators. Since the land-reform program was Government-sponsored, the Government has the obligation of providing the services needed to protect the gains made thus far in correcting the land-tenure system.

Approximately 900,000 acres of land have been reclaimed since the end of the war. During the next 10 years it is estimated that another 2½ million acres possibly may be reclaimed. This may provide for at least half a million new farms and settler families. Many of these settlers will have had little farm experience and will be confronted at the outset with a sizable debt load. It is, and will continue to be, essential that these new farmers be provided with the technical help needed to provide maximum insurance that the reclamation and settlement efforts will be successful. Past settlement efforts of the Japanese Government, in Hokkaido, for example, were largely unsuccessful because the projects were ill-conceived and no follow-up was provided to see that farmers received the technical help so badly needed. Japan cannot afford to make such mistakes again.

A project in operation

The manner in which an extension program in Japan might be carried out may be illustrated by an improvement project for white potatoes begun in 1948.

Diseases and insects have been estimated to cause an annual 25-percent loss to the white-potato crop in Japan. In specific areas, these losses have amounted to 50 percent or more. Yet many of the experiment stations had evidence showing that—

> Diseases and insects could be controlled by proper spraying.
>
> Good seed potatoes, largely disease-free, could be obtained if proper control of seed stocks was maintained.
>
> They had encouraged the passage of a law providing for government assistance in inspecting seed potatoes.
>
> On a few of the government farms good seed stocks were maintained and distributed to other experiment stations for variety test plots.

In spite of all this available information, nearly all of the farmers were sustaining heavy losses. Only a few were practicing methods recommended by the experiment stations.

The improvement program centered around the following points:

Setting up several spray demonstrations in seed-producing areas to control insects and diseases.

A week of leader training to inform food-office inspectors in the techniques of potato-disease control.

Meetings with farmers growing improved seed, to instruct them in the proper methods of producing good seed potatoes.

A conference to train leaders in detection and control of ring rot.

Many government agencies lent a few of their technicians to assist in carrying out this program. They later declared, "If this is what extension will do for the farmers, we want more of it." The farmers were enthusiastic about the program to the extent that they were asking the government to provide them with chemicals for the following year, even before the growing crop was harvested.

Well-trained agents in an extension program in a few years could easily show an increased potato yield of 50 percent or more on the present cultivated acreage, as well as a greatly increased acreage.

Korea

Before the Second World War, Korean economy was dependent on the exchange of goods and supplies with Manchuria and Japan. Since then the major problems in the predominantly agricultural economy of Korea result from the urgency to provide for the pressing food and fiber needs of an increasingly large population with only a limited amount of arable land available for food production. The combination of large population and limited acreage necessitates maximum production per acre regardless of output per man. To accomplish the goal of maximum production many obstacles must first be overcome.

The major obstacles to increased food production in Korea are inadequate supplies of commercial fertilizer; difficulty in obtaining adequate materials for construction and maintenance of irrigation works and for flood control; lack of pesticides; and need for improved and disease-free crop seeds and nursery stock.

A companion problem to the shortage of food and fiber is the shortage of fuel. South Korea lacks bituminous coal and must rely on anthracite coal and wood supplemented by bituminous coal for her fuel needs. In large areas of the peninsula the forest cover has been cut down completely, leaving the hillsides bare. This has resulted in erosion and disastrous floods and in shortages of fuel and lumber. The need for reforestation projects is acute. Extension work should emphasize the twin benefits of flood control and an increased fuel supply to be derived from any projected reforestation program. The trees selected for planting should include quick-growing varieties as well as the more standard varieties of forest conifers.

The foregoing problems are only the ones most pressing in Korea today. There is room for improvement in many other aspects of rural as well as urban life. What we have already enumerated could serve as a starting point (or rather a point of continuation) for rural extension energies. In Korea, as in most other oriental countries, extension workers will be faced with the problems of limited education, insufficient paper supplies for printing and illustrating educational material, and inadequate transportation and communication facilities.

Significant agricultural practices

One key to increasing yields from Korea's depleted soils is increased application of commercial fertilizers. Korea usually uses only one-half as much fertilizer per land unit as does Japan and receives only two-thirds the yield. Double cropping of land can be extended by the increased use of fertilizer. The Korean farmer knows this, and no "selling" is required to dispose of all available fertilizer supplies. Any extension work undertaken in connection with increased use of fertilizer would most profitably concentrate on teaching the farmer to use the proper kind and amount of fertilizer for each particular crop. The primary obstacle to be overcome in increasing the supply of fertilizers in South Korea is the lact of access to ammonium sulfates or phosphates produced in North Korea.

Irrigation has been practiced in Korea since time immemorial. Approximately 70 percent of Korea's ricelands are under controlled irrigation and yields are doubled as this is extended. Most of the irrigation is accomplished by means of gravity flow of water from reservoir or by motor pumps through small diversion canals and ditches. Mechanical devices for lifting are used very little. Irrigation works have been constructed and operated mostly by irrigation associations with government tie-up, and on a smaller scale by individuals. Further construction would be hampered if importation of materials through supply programs were curtailed. Much irrigation work was developed by the former Japanese sponsored Oriental Development Company, whose operations were taken over by the National Land Administration. The irrigation works are now being organized and turned over to irrigation associations.

The situation is complicated by the fact that cement and steel have high value in the black market, and the tendency to divert materials in this direction is great.

Diseases and insect pests that affect agricultural crops and products in Korea are exceedingly numerous. Most of these can be controlled by proper cultivation and fertilization, development of resistant varieties, or the use of fungicides and insecticides. The prewar sources of the different chemicals are not known, but experience in South Korea since 1945 indicates that most of them were imported from other countries or came from North Korea. The low income of farmers has restricted the extensive use of insect poisons. The current extension of United States economic aid to the Korean Government has provided for a wider distribution of insecticides to Korean farmers. Saving crops from destruction by insects and fungi lightens the burden of importing food into Korea. The distribution of insecticides and fungicides, however, should be accompanied by field demonstrations by qualified extension workers to insure that such supplies are used with reasonable efficiency. Instructions printed in the Korean language would be extremely advantageous.

The growing, collection, and distribution of good seed is basic to the maintenance of high crop yields. The agricultural experiment stations in Korea have been working long and hard to develop better grain varieties and strains that will give higher yields. They are also working on the development of varieties that are more resistant to disease.

Improved seed rice is propagated by the experiment station through the use of "primary" and "secondary" producers, who are paid a bonus for growing such seed. The objective of the system is to assure high-quality seed to the final producer. The primary producer is supervised by rice-production specialists in the provincial bureaus of agriculture. The secondary producers are supervised by the county rice specialist with the help of bureau supervisory personnel. In 1947, 2.5 million bushels of rice seed were grown by this method. This amount was sufficient to plant 80 percent of the total rice acreage in South Korea.

Efforts are also being made to improve barley seed stocks that in the past have carried a high degree of smut. Much teaching work remains to be done. Many lots of seeds are mixed. Barley, wheat, and rye are sometimes found in the same sowing. Chinese cabbage seed usually is a mixture of several varieties. Growers of cabbage seed, however, have organized themselves into the Vegetable Seed Federation for the purpose of producing larger quantities of higher quality seeds. Attempts are also being made to begin the growing of certified seed potatoes from imported disease-free stock in certain areas where this is possible.

Some extension approaches to Korea's problems

In many other places in Korea energies might be profitably expended for extension education. Some work needs to be done to make agricultural cooperatives more truly farmers' organizations instead of quasigovernment organs through which extension work is carried on by official decree. Scientific animal-husbandry principles need to be taught in addition to better crop-production practices. Improvements in dietary and nutritional habits have been much neglected, and considerable work needs to be done in improving the preparation of food and in broadening the base of the Korean diet. Cleanliness and sanitation need to be popularized among the rank and file of the population. Such changes, unfortunately, will probably follow, rather than precede, an improvement in the economic well-being of Korea.

Any program for increased food production, reforestation, or extension education should preferably be undertaken through existing governmental or local rural organizations such as experiment stations, irrigation associations, or agricultural associations. A rather strong sentiment exists in favor of continued improvements among government officials and among the farmers themselves. This fact is evident from steps that have already been taken by native groups. Although there was considerable dislocation and impediment to progress during the war and postwar periods, the total area under irrigation and the use of fertilizer increased greatly during the 20-year period to 1941. Acre yields of rice in that year were 135 and 144 percent of what they were in 1920, whereas the planted area increased by only 7 percent. Steps have been taken recently to plan a program of soil conservation. A considerable number of engineers and other employees are trained in the fundamentals of soil conservation, and they in turn will demonstrate for the benefit of the farmers how soil erosion may be controlled and soil fertility improved.

In Korea, extension work of a kind is carried on by the newly organized Extension Service of the Department of Agriculture, by agricultural colleges and schools, and, to some extent, by Christian missionary organizations. The Central Extension Service has been organized within the past 2 years and has yet to become firmly established as a useful and efficient organization. The agricultural schools and colleges, though more firmly established and having the advantage of working among a large number of farm boys, have a general educational curriculum and are not able to concentrate to any extent upon agricultural extension work. When qualified teachers, facilities, and supplies are available for teaching, much can be accomplished through these institutions.

The Extension Service has an agent in every gun (county) and myun (township). The organization is handicapped somewhat by being set up on a county basis. The extension workers in each county are responsible to the governor of the province rather than to the director of the extension service in the province. Steps are being taken to remedy this situation in order to prevent excessive political manipulation of the organization.

Although Korea came to be known as the Hermit Kingdom because she expelled foreigners from her soil and refused for many years to make normal contacts with other nations, there is no evidence now of any deep-seated attitude on the part of the Korean people that would impede the normal progress of an extension service. There is, however, the usual aversion to change and to foreign suggestions. If any new ideas or methods are to receive serious consideration from a Korean, he must be shown that they are workable. However, if demonstrations are simple in nature and if immediate benefits are to be derived from the new method, no difficulty will be had in obtaining its adoption. Superstition is common, but is seldom a hindrance to the propagation of demonstrably useful ideas. Koreans of all ages have a traditional and avid interest in learning. Korea's facilities for educating her people lag far behind the people's desire for knowledge. This desire for knowledge can be put to maximum use by the employment of proved extension methods.

Considerations other than economic and social affect the advisability of undertaking specific measures to alleviate particular situations in any given area. In Korea, political considerations and complications continue to multiply and aggravate the usual problems of production and distribution. The presence of an artificial barrier prohibiting normal intercourse between industrial North Korea and agricultural South Korea will continue to hinder the success of any program designed to raise the standard of living in either zone.

There appears to be little probability of a change in this in the near future.

Korea's truncated condition will probably persist until such time as international political cooperation becomes more nearly a reality. If this condition should continue, agricultural extension work, as well as education in general, will suffer. However, the existence of even such an obstacle is not a legitimate excuse for doing nothing to eliminate undesirable conditions. Such difficulties only point-up the need for a more thorough preparation of the program to be followed in a given area, and the necessity for employing experienced personnel who have been thoroughly oriented to the needs of the area in question. Close adherence to this principle can help to insure a larger measure of success for extension programs everywhere.

COMMITTEE MEMBERS:

Group for Eastern Asia.—Fred J. Rossiter, Office of Foreign Agricultural Relations, United States Department of Agriculture, Chairman, and Glen Briggs, Agricultural Research Administration, United States Department of Agriculture, Cochairman.

Group for China.—J. Lossing Buck, Agricultural Division, Food and Agriculture Organization of the United Nations, Chairman; B. L. Hummel, Department of Rural Sociology, Virginia Polytechnic Institute, Blacksburg, Associate Chairman; W. A. Anderson, Cornell University, Ithaca, N. Y.; John Deal, Food and Agriculture Organization; Walter Pawley, Food and Agriculture Organization; C. E. Seitz, Virginia Polytechnic Institute; Ide P. Trotter, Texas Agricultural and Mechanical College, State College; Hsin-Pao Yang, Food and Agriculture Organization; Martin C. Young, Department of Sociology, Cornell University.

Group for Japan.—J. S. Owens, University of Connecticut, Storrs, Chairman; Raymond H. Davis, Soil Conservation Service, United States Department of Agriculture; W. D. Lee, North Carolina State College of Agriculture and Engineering, Raleigh; Arthur F. Raper, Bureau of Agricultural Economics, United States Department of Agriculture; S. C. Salmon, Bureau of Plant Industry, Soils, and Agricultural Engineering, United States Department of Agriculture; and E. J. Wheeler, Michigan State College, East Lansing.

Group for Korea.—Glen Briggs, Agricultural Research Administration, United States Department of Agriculture, Chairman; Tilmer O. Engebretson, Office of Foreign Agricultural Relations, United States Department of Agriculture, Associate Chairman; Millard Peck, United States Department of State; Arthur Peterson, Munitions Board, Office of the Secretary of Defense; and M. G. Young, Production and Marketing Administration, United States Department of Agriculture.

Southeastern Asia and India

Burma, Federation of Malaya, French Indochina, The Republic of the Philippines, Thailand, and India

The Committee for Southeastern Asia and India gave attention to extension problems in the countries of Burma, Malaya, French Indochina, the Philippines, Thailand, and India. For most of the region agricultural economy is largely subsistence, or at most a mixture of subsistence and limited money economy.

Since the 1944 conference (*9*) increasing agricultural production to prewar levels has been one of the most vital problems in the area. All six subject countries are heavy rice consumers. Burma, Indochina, and Thailand are traditionally the largest exporters of rice in the Far East, but wartime military operations and postwar political disturbances have prevented them from attaining their prewar level of rice production. Increases in population have also created greater domestic requirements. Food-importing countries such as India, Malaya, and the Philippines, have not been able to obtain the usual amount of food from their three rice-exporting neighbors. Instead, these countries have had to press for increased domestic production and increased imports of food grains in order to feed their growing populations.

Export market prices for rice and other agricultural products are often below the cost of production. Usually the prices paid for agricultural products are on the basis of quantity, not quality. This presents a serious problem, because too often the varieties recommended by the Department of Agriculture and encouraged by the extension staff, yield a smaller quantity per acre than the varieties traditionally grown. It seems apparent that if the improved-quality varieties are to receive farmer acceptance, greater care in the future needs to be given to improved methods of grading, and there must be a substantial economic reward for produce of superior quality.

Some of the countries of the region have made notable progress in the selection and development of improved varieties which have resulted in either increased yields or improved quality. Several of the agricultural departments have carried on numerous experiments and test demonstrations in agronomy and fertilizer practices related to growing of the principal crops of the country. Basic research, though limited, has contributed to the control of pests and diseases of agricultural crops and livestock.

Inadequate research and experiment-station facilities along with a shortage of technically trained research workers are problems in the way of agricultural advancement in most countries. Not only are staff and research facilities inadequate, but often there is, on the part of the administration and scientific staff, a lack of basic knowledge as to what needs to be improved, and how. For example, there is a general lack of knowledge regarding the kinds of improvements in livestock, crop varieties, and soil treatment needed to aid the farmer and the country. This situation frequently results in farmers' being encouraged to follow recommendations that are not basically sound. And because the peasant farmer frequently accepts these recommendations and the results are discouraging he tends to distrust all but folk knowledge.

Frequently budgetary appropriations directed toward improvement of the principal crops are not in proportion to the overwhelming importance of the crop in the nation's economy. In Thailand, for example, rice, the dominant and most important crop, is given relatively minor research attention. The crops that are given undue amount of attention are frequently those that might be used in rotation with rice.

In somewhat the same way, too often emphasis has been placed upon the importance of fancy breeds of poultry, swine, or cattle. Too frequently foreign breeds have not proved adaptable to environmental conditions, the feed available, diseases, parasites, and the humid equatorial lowlands of southeast Asia. Not only is a disproportionate amount of time, energy, and money spent upon foreign breeds that too frequently are failures, but these animals are also crossed with local breeds, thus mongrelizing them. The fear is that such cross-breeding will seriously lower the resistance of the progeny to endemic diseases. Limited experience and observations with respect to the breeding program suggest the advisability of spending more time and money on selection from native breeds and, by up-breeding, developing strains from stock that already has a reasonable amount of resistance against serious endemic diseases and pests.

Because of the limited research and scarcity of scientific literature based on conditions of the countries, teaching is rather difficult. Too frequently the textbooks are foreign. Instead of engaging in basic field research that would contribute to the literature and understanding of the country, too frequently the best agricultural scientists in the country spend all their time teaching or doing personal research in the agricultural schools.

Still another serious problem for most of the countries is that currently most of the men selected and trained in agriculture are city born and bred and are therefore completely lacking in agricultural orientation. Because these students are not of agricultural origin they lack the know-how to work with farm people. There is also within them a strong attitude of not wanting to get out and mingle with farm people.

Recent experiences with agricultural technicians from other countries who have visited the area have not been entirely satisfactory. Though most of them have been thoroughly sincere people, their tendency is to want to impose the agricultural technology of their country on the area. In the future, to be effective, American and other occidental agricultural specialists must spend enough time in a given country, or in the general region, to understand the real significance of the features of the agriculture of the region and what can be done that is practical to improve it; not to make it more like occidental agriculture. This of course means that the specialist from abroad must in the future spend years, rather than weeks or months, in any one region.

One of the serious difficulties in attempting to improve the agriculture of southeastern Asia is the poverty of the farmers and their lack of permanent tenure of the land they cultivate. They can be evicted at any time. Too often, operating under annual leases they are not only unwilling but also unable to make improvements in their farm land—either to fertilize the land, erect buildings, dig wells, or otherwise make the property permanently more productive.

Cooperative credit societies, though very successful in Scandinavian countries and in the United States, are so far a dismal failure in southeastern Asia. The farmers think in terms of raising enough to eat, of setting aside enough for seed for next year's planting, and then to have something to give to the merchants against their accounts. In some parts of southeastern Asia, cooperation of neighbors in farm operations is rather common. In general the merchants who operate in the mixed economy, which was developed after the expansion of international commerce and the growth of cities in a subsistence economy, are opposed to the development of farmer cooperatives.

Burma

Burma became an independent country outside the British Empire and Commonwealth of Nations on January 4, 1948, the first such departure from the Empire since the American Revolution. Interest in Burma's progress stems not only from a natural concern over the success of a once-dependent people in working out their own future, but equally from the importance of Burmese rice to the world's food supply.

Agrarian distress in Burma today is attributable in the main to the fact that much of the country was fought over in 1942 and in 1944–45 and was subjected to constant bombing throughout the war in the Pacific. Loss of an export market and the Japanese Army's insatiable demands for men and cattle caused millions of Burmese to give up farming. The outbreak of civil war prevented the orderly resumption of cultivation on a prewar scale. The lot of those farmers now tilling the soil is a difficult one. Large parts of the country are overrun by bands of well-armed insurgents. The farmer is short of cattle, and his carts, plows, and implements are old and worn. His land is covered with weeds, and much-needed agricultural supplies are hard to get. The cost of living and of cultivation is high and money is scarce.

On the other hand, agricultural recovery has been aided by the dependable monsoon rains and an adequate supply of agricultural labor. Burma is able to meet her own seed requirements and has adequate supplies of feed for her cattle. Many farmers have not been required by the Government to pay rent on the land they occupy, and they have been further helped by low-rate government loans.

Agricultural education

Because of the foregoing conditions, agricultural education and extension activities have been complicated greatly during the postwar period. The Agriculture Department, as well as the agricultural college and the eight agricultural stations, lost most of their libraries during the war. Requests for replacement of these books have been made from various sources.

Aids to agriculture

The Department of Agriculture, Government of Burma, has endeavored to increase agricultural production and rural welfare through a broad program of activities, but it has been handicapped in carrying out its program by inadequate funds and an insufficiency of trained personnel, as well as by internal disorders. Research in improving crop strains, use of fertilizers, cultivation methods, and insect control have been carried on at the government agricultural stations at Akyab, Hmawhi, Magwe, Mahlaing, Mandalay, Myaungmya, Mudon, and Pyinmana. Agricultural courses are being given at the agricultural college at Mandalay. Elementary courses are given at the eight central farm schools. Advisory services include demonstrations on farmers' fields, lectures, and literature. Approximately 200 government seed farms are issuing improved varieties of seed to farmers.

Agricultural cooperative societies grant loans to farmers at low rates and assist them in marketing their produce. Of the almost 1,600 credit and marketing societies existing in prewar days, over one-half have so far been reorganized. The Government has also established a cooperative state training school in Rangoon, capable of accommodating 50 students at each of the two 5-month sessions every year. Successful students will be eligible to qualify as supervisors in the department of agriculture. The object of the school is to provide a uniform means of training personnel in the correct principles and laws of cooperation, so that the knowledge attained may be applied in the best possible way for carrying out various schemes based on cooperative methods. Since an authoritative means of imparting such knowledge has been lacking in the past, naturally individual opinions regarding agricultural methods have been expressed. In certain instances, such information has been incomplete and has led to confusion.

The veterinary department's program to replenish Burma's working and dairy-cattle stocks was interrupted by the capture and destruction of its breeding farm by insurgents.

Land tenure

The Land Nationalization Act of 1948 prohibits private ownership of land in excess of 50 acres. Approximately 8 million acres owned by nonagriculturists are scheduled for redistribution by the Government. It is too early to predict the exact implementation of this law, but obviously some changes in land tenure are under way.

Public health

In the field of public health Burma could benefit from the advice of foreign technicians. Burma's present health administration is woefully inadequate. Little attention is paid to proper sanitation methods. The few hospitals in the country are staffed mainly by Indian doctors. More qualified Burmese students should be encouraged to take their medical training abroad.

Economic development

Burma possesses rich natural resources, but lacks both the capital and a sufficient number of scientists with technical know-how to develop these resources without foreign assistance.

Burma's economy is basically agricultural and revolves around rice monoculture. Crop production could undoubtedly be greatly expanded by a long-term agricultural advisory program. Burma needs foreign agricultural engineers, soil chemists, and animal-husbandry experts. Burmese agriculturists must be taught not only improved methods of cultivation but crop diversification, which will result in an improved diet for the Burmese people.

Burma ended its first year of independence in the midst of growing civil disturbances. Any significant progress in technical aid and in agricultural research and education will undoubtedly be delayed until the return of political stability. At this writing such stability is not yet in sight.

Federation of Malaya

The Malayan Union, consisting of the former Federated Malay States, the former unfederated States, and the settlements of Panang and Malacca, became the Federation of Malaya in February 1948. The Federation was, unfortunately, not directly represented in the Committee for Southeastern Asia and India, and no accurate picture of the condition of agricultural research, education, and extension activities in the area was available. For purely informational purposes it may be useful to review the pertinent basic facts relative to the agricultural economy of the Federation.

Area

The total area of the Federation of Malaya, exclusive of Singapore Island, is slightly over 32 million acres, of which 6 million acres are devoted to agricultral land and buildings. Of the approximately 5 million acres under cultivation, 64 percent are in rubber. Major crops other than rubber are rice, coconuts, pineapples, and oil palm which occupy about 28 percent of the cultivated acreage. Coffee, tea, fruits, and various spices are grown on the remainder. Important export crops are rubber, coconuts, oil palms, pineapples, spices, areca nuts, and cassava. Rice is grown exclusively for domestic consumption.

Population

The population of the Federation, excluding Singapore Island, was estimated in 1947 at slightly under 5 million persons. Malays and part-Malays make up about 50 percent of the population; Chinese, about 38 percent; and Indians, 10 percent. Europeans, Eurasians, and others are insignificant, numerically speaking.

Agriculture

Agriculture is Malaya's basic industry, but despite its importance, Malaya is not self-sufficient in foodstuffs, since nonfood crops occupy a larger part of the cultivated land than do food crops. Twenty-six percent of the prewar population was directly occupied in agriculture, but indirectly a considerably larger percentage derived its livelihood from the land.

Types.—Malayan agriculture falls into two distinct types, subsistence agriculture, primarily carried on by Malay peasants, and commercial agriculture, which produces crops for foreign markets and is dominated by Chinese and westerners. The average native Malay farm has only a few acres, but the western-owned plantations range from 100 acres to several thousand. Chinese plantations are usually smaller than those western-owned. The quantitative division of the cropland between peasant agriculture and estate agriculture is unknown.

Crops.—Rice is the mainstay of the Malayan diet and is grown almost exclusively by Malays on small holdings. Most of the rice for the peninsula's requirements must be imported. Yield per acre is low, and efforts to raise both area and yield of rice have been largely ineffectual. Coconuts, coffee, tea, and spices are also important crops.

Livestock.—Livestock raising is not extensive. Cattle and water buffalo are mainly a source of power, and considerable numbers are imported from India for this purpose. Non-Mohammedans do some pig raising, and goats and sheep are seen in small numbers throughout the country. Improved poultry farming is virtually unknown, but no farm is complete without a few ducks or chickens. No reliable data are available on the consumption of animal products produced locally, but the country imports large amounts annually to satisfy the demand for dairy products, eggs, and meat.

Food.—A very large proportion of the diet of the Malay, Chinese, and Indian population is made up of cereals, particularly rice. Root crops such as sweetpotatoes, cassava, and taro supply additional carbohydrates. Fruits, vegetables, fresh coconuts, coconut oil, fish, eggs, poultry, and meat are consumed in the form of side dishes which make rice more palatable. No data on total caloric intake are available.

Too much emphasis on export crops, low domestic-food production, and dependence on imported rice are three glaring weaknesses apparent in Malayan agriculture. Efforts to encourage diversification of agriculture and greater food production have so far met with little success.

Problems.—The Federation is beset by most of the problems usually associated with agriculture in the other less developed countries of the world. Agriculture is not accorded the attention its importance to the national economy demands. The standard of living among rural workers is low, and the average agricultural worker or farmer is largely preoccupied with obtaining the basic essentials of living. Educational standards are improving, but illiteracy is general in rural areas. Research work has been confined largely to improvement in the production of commercial export crops such as rubber. Native crop-production methods are primitive, tools are crude, and yields per land unit are low. Malaya is a fertile field for elementary instruction in crop production and soil management. The Federation has a director of agriculture but no formal extension service.

The Federation has a serious population problem. The growing number of Chinese and Indians in Malaya is tending to increase racial conflict between these races and the native Malays. The Chinese and, to a lesser extent, the Indians come in contact with the natives chiefly as money lenders, middlemen, and estate owners, where there is abundant opportunity for exploitation of the natives. The British have acted as a buffer to prevent unmerciful exploitation of the Malays by Chinese and Indians. At the same time, it must be acknowledged that the importation of Chinese and Indians was encouraged by foreigners in order to get a cheap supply of labor. The Chinese come in closer contact with the native Malays than the British do and take advantage of them in many small but extremely irritating ways. The Indians are also disliked by the natives because many of them engage in the same practices. These two races are "hated foreigners" in the eyes of the Malays. Extension workers might well find such a situation a complicating factor in their work.

French Indochina

As in 1944, this important Far-Eastern country again did not have direct representation on the Committee for Southeastern Asia and India. No significant developments in activities suggested by the Committee's terms of reference were reported for the area.

Indochina's economic life has been greatly disrupted in the past few years by internal political disturbances. In this respect, it is no different from some of its neighboring countries. However, since Indochina is traditionally one of the few surplus-food producing areas in the Far East, civil disturbances, inevitably resulting in smaller exports, affect, in turn, the welfare of neighboring deficit areas.

Indochina, though now technically sovereign, remains closely allied to France. It has been the most prosperous and the most populous of all French colonies. Rice is the principal crop and export item. Rubber and teak are also important sources of foreign exchange. Religion is a compound of Buddhism, Confucianism, and Taoism. Roman Catholic converts number about 1 million. Education was for centuries based on the Chinese classics, but the French provided a Romanized alphabet and Franco-vernacular education for the elite. Public health and medical facilities compare favorably with those of most far-eastern countries.

Agriculture

Indochinese agriculture is built around the village, which is largely autonomous. It is hoped that the social and economic life of the typical village may flow on with only minor inconvenience from civil disturbances.

A feature of Tonkinese agriculture, and one that represents a less developed stage of social and economic revolution, has been communal ownership of land. Rural extension workers could do well to exploit the natural inclination of ethnic and village groups to work together in community enterprises.

Indochina is rich in undeveloped natural resources, but there is a great need for technical information. Extension workers would find the country very receptive to any type of information that would result in improving the standard of living through the more efficient utilization of indigenous resources.

Improved sources of agricultural credit are needed in Indochina. Usury is rife, and a large part of the agricultural population appears either to borrow money at exorbitant rates or to lend at such rates. Cooperative credit institutions are known to some extent, but in most areas their numbers are too small to merit statistical enumeration.

The Republic of the Philippines

On July 4, 1949, the Republic of the Philippines completed its third year as an independent nation. Born into the family of nations after a historic 48-year period under the American flag, the new Republic faced difficult and challenging problems. The manner and extent to which the new nation faced these problems were a matter for discussion by the Committee.

Among the major problems faced by the new Republic in 1946 were economic reconstruction and rehabilitation, financial stability, and agrarian unrest. The Committee for Southeastern Asia and India was concerned with the degree to which the Philippine Government recognized and utilized the value of agricultural extension principles in carrying forward its program for alleviating the conditions brought on by these problems.

Extension

The Committee was of the opinion that the Government has been cognizant of the importance of an effective extension service and the benefits to be derived from such a service, although there is no centralized agricultural extension service organization in the Philippines. Extension work is the responsibility of the Department of Agriculture and Commerce. Within the department, several bureaus maintain separate extension programs and personnel. This organization extends to the provinces and some municipalities. There is considerable duplication of effort, division of responsibility, and a multiplication of personnel. There is also a great deal of segmentation of extension work in dealing with peasants. Greater efficiency would result from a tying together of research and extension activities. Coordination of research in the Department of Agriculture and Commerce with research in the college of agriculture is needed also.

Animal- and plant-disease control work, including inspection, quarantine, and enforcement of laws and regulations, is the responsibility of provincial and municipal employees.

Services of government to agriculture

The Philippine Department of Agriculture and Commerce is divided into eight bureaus and six divisions. A number of top executives in the department are considered well-trained and fully qualified by experience for their positions. The department, however, does not receive an amount of financial support commensurate with the importance of agriculture to the national economy. Relatively small amounts are available for the developmental and promotional aspects of departmental activities. It is acknowledged, however, that agricultural schools and colleges are supplementing to a large extent the work done by the Department of Agriculture and Commerce. This is especially true of the College of Agriculture of the University of the Philippines, located at Los Banos and supported by the Department of Education.

Government research, never highly developed, was disrupted by the war and has never been fully restored. Los Banos, in prewar years, did not receive the appropriations necessary to develop the strong experimental station it has blueprinted. Limited funds and trained personnel within the Department of Agriculture in postwar years have resulted in the diversion of research to problems of immediate urgency rather than to long-term research. The prewar Research Council, representing all public and private agencies interested in research, supported by public and private funds, was a potentially valuable body for promoting and correlating research. It has not yet been fully reestablished, but progress to this end has been made, and it is hoped that the council will again be a spearhead for the promotion of scientific research.

Agricultural education

Desire for learning is one of the most hopeful traits of the Filipino character. The average Filipino does not have to be coaxed to go to school. He is thoroughly convinced of the benefits of an education and will voluntarily undergo considerable discomfort in the process of acquiring a greater store of knowledge.

Before the Second World War, the College of Agriculture at Los Banos had an enrollment of about 500 students, but postwar enrollment has been only about half as large. This total represents less than 1 percent of all college students. The primary reason for the small number of agricultural students at college level is the Philippine tendency to look down upon the study of agriculture and upon farming as a profession. When one notes the low salaries of agricultural specialists, such a viewpoint is understandable.

The low status of agricultural workers in a country so predominantly agricultural is hard to justify on economic grounds. If Philippine agriculture is going to rise out of the rut of inefficiency and low productivity, good students and effective workers must be attracted into the field of agriculture. Since agriculture is the base upon which the Philippine economy is built, and is the primary source of foreign exchange, the nation cannot afford to neglect it either as a field of study or as a profession.

Besides the College of Agriculture at Los Banos, Silliman University (an American-sponsored protestant institution) also includes instruction in agriculture in the vocational normal curriculum, and in other schools of the university.

There are four national agricultural training schools with about 500 students each. Before the war their curriculum was excellent. The school at Munoy, in central Luzon, was well-known for its accomplishments and high standards. Students at these schools are self-supporting, being required to engage in practical farm work while in school.

The national agricultural training schools offer two courses: A 4-year secondary course and a 2-year postsecondary course. Both study and practice are emphasized. After the second year, students live on the school farms, conduct all the work, and receive payment from the profits.

Provincial schools, of which there were 20 or more, are offering courses in agriculture and receiving some aid from the national treasury. They give 4-year courses at the secondary level. The larger, better equipped schools of this type take boarding students, whose expenses are paid by their work on the school farm. Some intermediate schools teach farming to fifth- and sixth-grade pupils. Settlement farm schools supported by the national Government provide basic farm training for non-Christians at the primary grade level.

The low efficiency and productivity of the Philippine peasant is not a purely postwar phenomenon. Farmers in the Republic have never progressed far beyond the purely subsistence level of productivity. If this state of affairs is not to continue, constructive programs of basic research and education must be developed and placed in operation.

Agricultural research

The promotion of science is a responsibility of the Department of Agriculture and Commerce. Included in such a responsibility are investigations and research into the improvement, production, and utilization of plant and animal products, and the introduction, testing, propagation, and distribution of improved varieties and strains of plants and livestock.

Pests and diseases flourish in tropical climates. The removal or minimizing of such hazards to agricultural production requires constant vigilance. Formerly, rinderpest took the lives of thousands of buffaloes, but excellent control work has reduced occurrence of the disease to such an extent that it is now practically unheard of.

Texas fever, foot-and-mouth disease, typhus, liver flukes, and other diseases and parasites of cattle are proper subjects for further control research. Control of Avian pest, fowl pox, and internal parasites of poultry would stimulate the development of commercial poultry ventures and contribute to increased efficiency of production.

Limited funds, the pressure of more immediate problems, and the limited personnel available have led to a diversion of research time and effort away from work in plant and animal improvement. As a result, this work has suffered.

Because of its central location and land facilities, the college of agriculture at Los Banos is ideally situated to conduct experimental work on a wide variety of crops. The college has produced significant research findings in spite of not having had sustaining appropriations. Properly developed, it could serve as a center of research under collaborative research agreements with other governments.

In addition to land and laboratories, many other essential aids must be provided to serve the best interests of research and education.

Mention of a scientific library hardly seems necessary. Libraries are an essential research tool, and will attract visiting or collaborating scientists and educators as quickly as good laboratories. Continuing support for the development and maintenance of a library is a necessity.

An arboretum of native and introduced species of economic and ornamental plants could be made an invaluable source of scientific materials and become a place of great natural beauty. A good beginning had been made on the campus and lands at Los Banos, and should be encouraged. In conjunction with the arboretum, an office, or branch, of plant introduction might well be established. Such an office would serve scientists in all the animal and plant fields by maintaining and systematically introducing specific groups or types of plants having characteristics the breeder will use. Exchanges between institutions all over the world might well be carried on by such an office.

Land tenure, credit, and cooperatives

The need for improved efficiency in agricultural production is very real. At the heart of this problem lies the land-tenure system. The war-end revolt of the Communist-led Hukbalahaps was a direct result of dissatisfaction with this system on the part of peasant groups. Although the Philippine Islands are potentially capable of supporting several times the number of people inhabiting the area, at present the amount of cleared land available for cultivation is insufficient. This has resulted in a lack of opportunity for cultivators, small-size farms, and a high rate of tenancy. Incentives to improve property and crop yields are limited under such a system. There is little opportunity to augment income in alternate occupations. The whole situation has created a condition of apathy among farmers and reduced receptiveness to progressive suggestions by way of extension methods. Making it possible for farmers to acquire land, improvement in the nature of rental agreements, and improvement in the general working relations between farmers and wage earners, landlords and tenants, all are matters in urgent need of attention.

Little progress in extension operations can be expected unless the interest and support of the landowning groups are assured in applying scientific methods and new agricultural techniques for the purpose of increasing production. Such groups must be convinced that improving soil fertility, irrigation, drainage, crops and livestock, diversification, yields per acre, and farm organization benefit them, or such projects will have poor prospects for success.

The standard of living among farmers is low in the Philippines. Credit is seldom available to farmers at reasonable interest rates. To make progress in improving agricultural conditions, a realistic approach to the credit situation is imperative. Financial institutions to facilitate economic improvements must be provided in sufficient number if farmers are to be enabled to procure the type of fertilizers, seeds, and equipment that are normally associated with extension education and promotional work. Credit on reasonable terms is also necessary in order that farmers may be assured of the basic necessities of life without mortgaging capital equipment.

Many functions now undertaken by the Government could properly be performed by the farmers themselves through cooperative organizations. Such organizations are fertile channels for the dissemination of information by extension methods. Many services not now available could probably be furnished farmers through additional cooperative organizations. Cooperatives generally are relatively free from political influences and as such could render valuable nonpartisan service in the extension of agricultural research and education.

Public health

Health conditions within the Philippines deteriorated during the late war, although no real epidemics occurred. With help from the United States Public Health Service, the situation is improved.

The principal diseases afflicting the people of the Philippines are tuberculosis, malaria, and respiratory and gastrointestinal diseases, the first two to a degree that reduces considerably the productive capacity of the individual. Typhoid fever is endemic; mild diphtheria is prevalent; infantile paralysis occasionally reaches epidemic proportions.

Malnutrition is a country-wide problem, although the Philippines are not subject to recurring families as are some other parts of the Far East. Diets consist largely of rice and fish, and are poor in proteins and deficient in fruit, vegetables, and dairy products. Better general dietary information is necessary plus economic improvements that will broaden the variety of foods available for consumption.

Water supply and sewage systems were widely destroyed by the war. The larger cities have restored safe water supplies and many additional communities are to have chlorination plants installed by 1950. Garbage collection and sewage disposal even in Manila are inadequate and sanitary conditions elsewhere are also in need of improvement.

During the year 1948, there were in operation four complete mobile health units. These traveling clinics went from one province to another offering free medical and dental services, including medicines, to the sick. They were also equipped with movie projectors for the entertainment and enlightenment of the populace in health, farming, and educational matters.

Progress in problem solution

Many problems associated with rural life remain to be solved. Progress toward their solution, though slow, is evident.

To aid needy tenants and contribute to the food-production drive, government loans were extended to tenant farmers in many communities in 1948. In addition, seeds, mainly rice, were contributed for distribution through the Department of Agriculture.

A government finance corporation has been making agricultural loans at a modest rate. These loans are for such purposes as construction of bodegas, drainage and irrigation canals, planting of ricelands, and purchase of work animals, tractors, and farm equipment. Such loans in 1948 increased more than threefold over the amount lent in 1947, when 5 million pesos were made available for agricultural development.

To improve the lot of tenants on large landed estates, the Government has begun to acquire these estates for the purpose of subdivision and sale to the tenants.

Shortly after the end of the war a Philippine training program was announced whereby the United States Government agreed to train approximately 850 Filipino students for public service. Training in the agricultural sciences was not included in the announced program of courses, but the courses scheduled were diversified to an extent that would insure great benefits to both nations. Other Filipino students are receiving technical and general educations through student-exchange programs with the United States, under the Philippine pensionado program and under the Fulbright Act.[6] Distribution of English-language books and periodicals was conducted with the advice of a group of Philippine educators. These books are to be translated to make them available to the Filipino public.

Many problems remain for solution. Some of these have already been elaborated upon. Aids that will put Philippine agriculture on a sound basis are most needed. The economy of the country remains predominantly agricultural and cannot be quickly changed. Emphasis on industrialization cannot obscure the fact that agriculture will remain the basic support of economic life in the foreseeable future.

---

[6] See footnote 9, p. 198.

To improve Philippine agriculture, many services are needed that the Philippine Government does not now provide. They include cadastral surveys, to open up unused land and to establish more farmers on their own land; soil surveys; seed selection; pest control; production of local fertilizer; improved methods of farming, including some mechanization; and irrigation. Research work, agricultural education, actual field operations, and extension work all are involved. The proper coordination of these four spheres of activity can do much to improve the standard of rural living in the Republic. A more prosperous farming class will raise the country's entire economic level.

Thailand

Education and research

Agricultural education and research in Thailand are still in their infancy. The college of agriculture was established only a few years ago. There are several agricultural experiment stations and some rice-seed farms. There are also some vocational agricultural schools. The principal experiment station is located near Bangkok, where current progress is reported in the breeding of improved grain varieties and better livestock and poultry. Fertilizing, manuring, and rotation tests have been conducted on crops such as rice, sugarcane, tobacco, and cotton. Only recently, attention has shifted from the quality improvement of rice for export to an attempt to increase per acre yields. Acting upon the advice of a mission, the Thai Department of Agriculture last year began a large-scale program of fertilizer experiments on rice fields.

The major attention of agricultural authorities has been directed toward increased production and export of rice. As a result of this motivating force, several tangible results have been observed. Rinderpest is the most widespread disease of cattle and buffalo, which are a basic source of power in the rice-growing area. Neglect of rinderpest-control work during the war resulted in a great increase of the disease. Since the end of the Second World War, the southern provinces have been cleared of the disease and partial treatment in the central plain area has met with favorable results. Some veterinarians have also been working in the northeastern provinces.

In addition to research on control measures for rinderpest, other positive measures of agricultural improvement have included distribution of rice seed and farm tools, repair of irrigation systems and construction of new ones, instruction in the proper utilization of farm machines, promotion of cooperative activities and the treatment of malaria and yaws, the main diseases among the livestock population. Some progress is also reported in crop-disease and insect-control work. DDT, benzene hexachloride, parathion, chlordane, 2,4-D, and other chemicals are being tested on various pests and crops. Adequate supplies of chemicals are not always available, and their cost sometimes is prohibitive.

Problems

The Ministry of Agriculture, Government of Thailand, reports that of the programs requiring further implementation, the following are a few:

> Replenishment of animal power by cattle breeding. Increased and improved use of fertilizers. Increased use of agricultural machinery for mechanized rice growing.
>
> Improved rural transportation and communication. A broadened health program for rural areas. Extension of irrigation projects. Rehabilitation of the fishing industry and improved marketing of marine products.

Many of the activities attendant upon implementation of the foregoing program of action will properly involve, in whole or in part, intensive concern on the part of extension workers and rural educators in Thailand. The extent to which such workers and educators avail themselves of the opportunity for constructive service can influence, even to a measurable degree, the rapidity and extent to which the objectives are realized.

India

Since the conference meeting in 1944 (*9*), India has become a self-governing member of the British Commonwealth of Nations. This assumption of power and sovereignty took place on August 15, 1947. Many problems attended upon the birth of the new nation. Rent asunder by communal disturbances attendant upon the partition of the subcontinent, the country was torn by riots and bloodshed. Thus, the nation experienced more violence and warfare at birth than it did during the Second World War.

Agriculture is in a primitive stage of development in India. Cultivation methods consist largely of hand labor, yields per acre are among the lowest in the world, and poverty in the rural areas is general.

Agriculture is constitutionally a provincial subject. Each province has evolved its own particular methods of developing agriculture, but has conformed in general to policy set by the central Government in order to qualify for financial assistance from the Government of India.

Need for education

In India, where approximately 85 percent of the people are illiterate, education is a basic need. The necessity for an organized attack on illiteracy provides a field of educational work that demands extensive effort and resources. The system of education planned for children is sufficient for the future, if implemented, but India cannot afford to wait until this skill and talent are available, or until outmoded ideas, stubborn prejudices, and contracted views are erased by time's wearing process. A good deal of work has already been done and much money spent, but effort has been sporadic and lacking in coordination.

Among adult Indians, steeped in numerous traditions, there will be many barriers to break down. Many barriers will disappear with the rise of new generations. In cities they are disappearing now. But what is true of cities is seldom true of rural areas, and in some of these the roots of old ideas are buried so deep that success will come very slowly. Even partial success, however, can have far-reaching and beneficial consequences.

The educational picture in rural India is not unrelieved of gloom. India has many good schools and colleges, able, devoted teachers and research workers, and institutions that rank among the finest in the world. Scholars are adding to India's fame in many fields. During the war young Indians from obscure villages mastered the operation of intricate technical equipment. There is no dearth in India of either mental or mechanical ability. It is necessary to stress this point for, too often, illiteracy and mental incapacity are confused. Illiteracy is not ignorance. However, ignorance in India is widespread, and a vast gap exists between the relatively small group of intellectuals, scholars, and technicians, and the great mass of the population. This gap must be bridged before the accumulated knowledge of the educated group can be made available to the masses. On the rural scene, the bridging of this gap could be measurably facilitated by the creation of an agricultural extension service.

Agricultural training

Facilities for agricultural education and training are inadequate but better than for other technical fields. Generally, each province has one to three colleges offering degrees in agriculture. Mysore State has one agricultural college but proposes to add two schools soon. A college of agriculture was opened recently at Sabour, Bihar, with provision for 30 students. This number will be doubled shortly. The United Provinces have one agricultural college at Cawnpore offering bachelor of science and master of science degrees. There were 356 students in 1944–45 and 440 in 1946–47. The Agricultural Institute at Allahabad also gives degrees in agriculture. The United Provinces also have three agricultural schools to provide training for the sons of cultivators. The number of students in these schools increased from 219 in 1944–45 to 375 in 1946–47. Madras has two agricultural colleges, one of them being only a year old. Bombay has three colleges, one of which offers doctor of philosophy degrees. Hyderabad State has one college and the Central Provinces have two. The directors of all three of these colleges are graduates of American universities. There are 14 schools for sons of cultivators. Supplementing the courses of all these colleges, postgraduate training is given at the Indian Agricultural Research Institute, Delhi. The central Government has also decided to set up a central agricultural college at Delhi. The plans for the college have been completed and it will start functioning this year. The Indian Dairy Institute, Bangalore, Mysore, offers bachelor of science, master of science, and doctor of philosophy degrees in dairying and dairy husbandy, and dairy-manufacturing research is also performed at this institute.

During the past few years, the central and provincial Governments also have been sending students abroad for training in agriculture.

Research

Commodity committees have been established with their own laboratories and experiment stations, for research. The cotton, jute, lac, sugar, and tobacco committees have done outstanding work in developing new varieties, improved cultural methods, seed distribution, and, in some areas, improved marketing methods. Most of the provinces and state unions have their own experiment stations to develop new varieties of crops grown in their area and to evolve new cultural practices.

Apart from these institutions dealing with the cultural aspect of agriculture, the Government of India has also made small beginnings with institutions for dealing with minor irrigation works and agricultural machinery. As part of the grow-more-food campaign, a central ground-water organization and a central drilling school have been set up to assist provinces in (1) obtaining materials necessary for executing tube-well projects, (2) training their personnel, and (3) actually constructing tube-well projects and demonstrating the use of mechanical equipment.

A central tractor workshop has been set up to recondition over 300 machines acquired from American surpluses. This equipment will be available for training new personnel. There is also a proposal to organize a special central agricultural-machinery bureau. It is intended that this bureau shall perform the following functions:

Organize and maintain a fleet of tractors with implements, workshop facilities, ancillary equipment, and trained staff ready for use both for training and operational purposes;
Train personnel, required by provinces, for maintaining and operating tractors and tractor implements;
Organize and maintain a testing station, collect data, and disseminate information.

Some of the provinces have tractor programs of their own.

Since 1935 the central and provincial state governments have also been having agricultural marketing organizations to deal with marketing research and development, particularly with regard to the standardization of quality, improvement of containers, dissemination of market intelligence, and regulation of markets. Proposals for strengthening these organizations are under consideration.

Problems

In ancient times India was famous as a great storehouse not only of diamonds and other gems, but of spices, sugar, and other plant wealth. It was this richness of nature's products that tempted Columbus and Vasco da Gama to sail the unknown oceans to try to find the way to India.

Since then, however, the population of India has increased many times, and many more mouths must now be fed on the products of Indian soil. A determined effort is being made to reclaim wasteland and to bring new land into cultivation. Increases in acreage under cultivation have been accompanied by decreases in average yields, and an unhealthy emphasis has been placed upon the growing of grain crops. The health of the rural population is at a low level because of deficient production of accessory foods such as fruits and vegetables. Increased food production is probably the most urgent need of India today. Indigenous production of food grains falls about 10 percent short of domestic requirements. The Government of India has launched an all-out "grow-more-food" campaign to stimulate agricultural production. The extent to which success is being achieved is partially indicated on page 78 of this report.

In prewar years, Indian agriculture was called upon not only to supply food for its large population and raw materials for its principal industries, but was responsible for almost 85 percent of the export trade. The partition of the subcontinent in 1947 created special difficulties in regard to food production. India retained 80 percent of the population, but was left with less than 70 percent of the original irrigated area. This has subjected food production to the vagaries of monsoon precipitation and rendered the use of more manure and better seeds something more of a risk.

The importance of agriculture to India is not evident on the surface. Usually the land is not worked efficiently. Indian farmers live in villages and go out each morning to cultivate various small-sized parcels of land that barely produce enough to yield them a meager living. The majority of peasants still sow and reap by hand. Fertility of the soil suffers because cow dung is more valuable as fuel than as fertilizer. Crop rotation is practiced little, good seed is not widely distributed, and livestock is generally small and poorly fed. Cultivation methods are primitive, and even where the soil is fertile productivity is limited because crude tools are used.

Another problem that looms large in Indian agriculture relates to animal husbandry. A large part of the population are vegetarians, and the production of animals and animal products receives less attention than in most other countries. Pastures are generally hopelessly overstocked. Fodder produced in the country has been estimated to be sufficient for only two-fifths of the livestock. Hindu veneration for the bovine complicates the problem of reducing the number and improving the breed of livestock.

The pressure of population in relation to the availability of arable land leads to cultivation on a small, individual scale. The situation is further aggravated by fragmentation, which is the outcome of the system of dividing ancestral property as equitably as possible. It is rare to find a holding that is not split up into at least three or four plots. Economic farming on widely scattered small plots of land is hardly possible. Fragmentation involves waste of time, money, and effort.

To be in debt is looked upon as the normal state of affairs in India, and the widespread evils of indebtedness are a part of the peasant's everyday life. The general low level of income in India places the peasant at the mercy of money lenders whenever natural calamities strike. The money lender is usually the most powerful man in a village, and, consequently, interests rates are exorbitant. Without a source of cheap and dependable credit to draw upon, the average peasant can make little progress toward an improved economic condition or greater productivity.

India presents a great variety of problems in connection with land tenure. The most prominent ones arise in connection with zamindari or absentee landlords. The jagirs are also landowners who in reality are feudal nobles who acquired land rights through direct grants from the British Crown. Land-reform programs are being promulgated on an almost nation-wide scale at present and within the next few years the number of peasants owning the land they till is expected to increase measurably.

The low physical vitality of Indian peasants is beyond dispute, and the economic losses suffered by the farmers because of disease cannot be overexaggerated. Their diet is inadequate, sanitary facilities are almost nonexistent, and these farmers fall an easy prey to a wide variety of ailments.

Some of the conditions that breed human and economic wastage could be remedied by the villagers themselves. Ventilation of houses, removal of garbage from streets, and protection of wells from pollution by latrines would lead to great improvement in public health. Better diets and medical service will probably have to await the general improvement in economic status that can be achieved only through more productive farming.

The depressing condition of rural life and agriculture in India is not a war-born phenomenon. The war and the subsequent partition of the subcontinent only aggravated the basic problem of too many people and too little land, to which there is no quick and easy solution.

Accomplishments

The Government of Bombay Province has started schools to impart practical training in farming to the sons of cultivators. The curriculum includes courses in modern agricultural methods, animal husbandry, and principles of cooperation. These schools are self-supporting, the income from the extensive lands attached to them being sufficient to meet the cost of maintenance. The Government hopes to establish one such school for each district in the Province.

The Government of East Punjab has given top priority to the production and distribution of seeds of good quality. Already about 700,000 pounds of improved wheat and over 50,000 pounds of rice seeds have been issued to seed farms by the Agriculture Department of the Province for future multiplication. There was at one time only one seed-multiplication farm in the Province, but a number of new seed farms have now been started, and for that purpose 15,000 acres of land has been allotted. Compulsory measures to promote use of improved seeds are under consideration.

During 1949 the Government of India exempted from the payment of customs duty insecticides, fungicides, and weedicides, including the basic chemicals used in their preparation which are required for controlling pests and diseases of crops.

Considerable progress in land reform has been made during the past 2 years. To make it possible for landless tenant farmers to own their own land, various provincial governments have passed laws designed to break up large land holdings. The feudal institution of jagir, the right to use of land, tax free, which had been granted by the Government to various nobles, is also to be abolished.

A development since the advent of the Union of India has been the undertaking by the central Ministry of Agriculture of large land-reclamation projects in various parts of India in which heavy tractors and plows are being used. In December 1947, a scheme of land reclamation through mechanization, described as the largest in the East, exclusive of that of Soviet Russia, was put into operation in the Meerut District of the United Provinces, when heavy mechanical machinery first moved up the sod of 50,000 acres of culturable wasteland overgrown with jungle and tall grasses. This scheme has since been followed by two similar schemes in the United Provinces, one in the Central Provinces, and one in the Matsya Union. The Ministry of Agriculture has assisted the provinces in reclaiming thousands of acres of land so far through use of tractors, either imported from Britain and the United States or reconditioned in their own workshop at Pusa.

Indicative of the present attitude of the primary producer is the increased emphasis that is laid today on the manufacture of compost from town refuse and the manufacture of gur (unrefined sugar) from palmyra juice.

Significant of the change in outlook in the provinces are the measures introduced in the provincial legislatures for the elimination of absentee landlordism. These measures propose that rights in land should be taken over from the intermediary landlords who function merely as the collectors of rents. They should, after due compensation, be made to retire from the scene. The measures are designed to improve the security of land tenure, encourage agricultural improvement, and at the same time assure the tiller of the soil of a larger share of the return from his labor.

The Indian subcontinent can boast that it leads the world in irrigation, but it is reckoned that only 6 percent of the water wealth is utilized, and thus a vast field still awaits and demands exploitation. Bound up with such exploitation are flood regulation, conservation of soil, prevention of waterlogging, fish culture, afforestation, provision of good drinking water, creation of recreational facilities, malaria control, and improvement of inland water transport.

Having now over 40,000,000 acres under irrigation, India has under actual construction or investigation multipurpose river-valley projects that are calculated to produce 10,000,000 kilowatts of power and irrigate within a few years 10,000,000 additional acres.

The Government of Bombay Province has announced that its grow-more-food program increased food-grain production by 100,000 tons in 1947–48 and 125,000 tons more in 1948–49.

The merging of a number of states with the Province has increased the population considerably and thereby increased grain requirements. These increased requirements have forced the Government to revise its grow-more-food goals. The goal for 1949–50 is 200,000 tons, and for 1950–51, 275,000 tons additional.

The increased food production during the past 2 years may be attributed partly to the distribution of improved seed. During the past season, seed to plant 2,600,000 acres was distributed by the Government. The Government also distributes mixed fertilizer which is sold to cultivators at less than cost. Peanut meal will also be distributed to cultivators at below cost.

Most of the municipal bodies in the Province have facilities for converting town waste into compost. It is expected by the end of the current crop year that all municipalities will be participating in this program.

It is also expected that under programs for well irrigation thousands of additional acres will be brought under irrigation during the current season. In addition, other land will be irrigated from pumping stations located at rivers having a perennial flow as well as from tanks constructed in areas where the land can hold the moisture. It is expected that the Government's tractor-plow program will also increase production through better land preparation.

These specific illustrations of Indian progress toward improved living conditions and opportunities for rural families are not exhaustive. Limited progress is evident in other places along other lines of activity. Rural-improvement workers, however, generally must be satisfied with small gains; a constant complicating factor in all programs for improved rural living is the problem of population. For every increase in the standard of living a disproportionate increase in the total population threatens to wipe out any real gains attained. When one weighs the magnitude of the problem against the net gains to be expected under such conditions, it becomes clear that revolutionary changes cannot be expected in the immediate future.

What Indian agriculture needs is more thought given to the land and more state money put into the dissemination of knowledge of improved agricultural methods and research. The relatively large number of young men who graduate from the universities each year cannot all be absorbed in existing professions in the cities. Some of these might well be given a short course in agriculture and utilized as extension workers in the villages.

COMMITTEE MEMBERS: Robert L. Pendleton, Johns Hopkins University, Baltimore, Md., Chairman; N. G. Abhyankar, Embassy of India; Dulce L. Bocobo, Food and Agriculture Organization of the United Nations; William H. Cummings, Food and Agriculture Organization of the United Nations; P. O. Davis, Agricultural Extension Service, Alabama Polytechnic Institute, Auburn; J. J. DeValois, Katpadi, South India; John Fletcher-Cooke, United Nations; W. D. Gunaratna, Embassy of Ceylon; John Hobbes, Office of Foreign Agricultural Relations, United States Department of Agriculture; N. R. Joshi, Food and Agriculture Organization of the United Nations; Charles J. Kneeland, Rhode Island State College, Kingston; Glen Overton, Allegan, Mich.; Glen L. Taggart, Office of Foreign Agricultural Relations, United States Department of Agriculture; Mary Rokahr, Extension Service, United States Department of Agriculture; U Ba Tin, Rangoon, Burma.

Africa

East and Central Africa, Ethiopia, Liberia, and British West Africa

The extension problem in Africa is primarily one of persuading African peasant farmers and their families to take advantage of western technical know-how. The object is not so much to get Africans to adopt, on their present holdings, the modern methods used on the European-operated farms and plantations in some parts of Africa.

Rather, it is to raise the African's standard of living by inducing him to apply improved methods that have been derived from western research and experience and have been tested under local conditions.

For the purpose of this conference, therefore, the Committee for Africa restricted its survey to a group of countries where farming or herding by Africans is practically the only source of livelihood and that are dominated by native agricultural and pastoral economies largely tribal in character.

This dependence on small farming units cultivated by primitive methods together with the prevalence of illiteracy, of low standards of living, and of widely varying types of economic and social organization, languages, and racial groups, have important effects on extension work. For these reasons, advisory and educational techniques must be custom-tailored to fit the many and diverse ways of living and farming found in Africa, and western extension methods are often useless.

The Committee, therefore, chose for its study five countries that serve as illustrative examples of the major racial groups, systems of government, and types of farming or herding found in Africa.

Southern Rhodesia and the southern half of Uganda are considered as representative of east and central African areas. (The major part of this region is populated by the African Bantu tribes. Southern Rhodesia has an independent government and practices some European farming; southern Uganda is in effect an African kingdom under British protection.)

Ethiopia, a monarchy, and the northern half of Uganda, administered as a British protectorate (both of which are inhabited primarily by Hamitic peoples), are considered typical examples of northeastern African culture.

Liberia, an independent republic of western Africa, and British West Africa, are areas where peasant farming predominates.

All these countries lie within 5 and 15 degrees north and 24 degrees south of the Equator and wholly within the Tropics. The climates range from equatorial with heavy rainfall on the coasts of west Africa through the temperate and moderate rainfall areas of British East Africa and Southern Rhodesia to desert conditions in Ethiopia. Some areas populated by nomads are sparsely settled, and other cultivated areas have population densities as high as 1,000 persons to the square mile. Much of the area, however, is not at present effectively settled, not because of climatic difficulties alone but as a result of the prevalence of trypanosomiasis (sleeping sickness) transmitted by the tsetse fly. Treaties also limit population movements.

In Africa, as elsewhere, extension cannot be regarded as a purely agricultural activity. It must be integrated on the one hand with the way of living of the people and on the other with the educational and regulatory activities of the government. We have, therefore, chosen for analysis in each of the selected countries, four broad problems that are deeply imbedded in the social and economic life of each area:

1. The need for improved production, marketing, and processing of crops and other sources of food for subsistence.

2. Improvement of cash income by the sale of crops, livestock products, or the farmer's labor.
3. Disease problems, such as rinderpest, that involve considerable governmental control and possibly the destructon of livestock and other property to which the African is deeply attached.
4. Land use, with particular reference to the maintenance of soil fertility and soil conservation—problems that must in general be solved by communities rather than by individuals.

East and Central Africa

The material for the section of the report on east and central Africa was limited almost entirely to Southern Rhodesia and the southern part of Uganda.

Southern Rhodesia

The population of Southern Rhodesia has been estimated recently at approximately 2 million and the area comprises about 150,000 square miles. About 450,000 acres are under crop cultivation by Europeans, and native farmers occupy some 2 million acres. The topography of this region falls roughly under three classifications: (1) Wide, undulating, grass-covered plains; (2) broken ranges of hills and isolated peaks, generally well-wooded; and (3) bush country and open plains alternating with woodlands.

Southern Uganda

Southern Uganda is made up rather largely of the Provinces of Buganda and Busoga with a total area of about 30,000 square miles, 8,000 of which form Lakes Victoria and Kioga. The region around Lake Victoria has frequent rainfall averaging about 50 inches per annum. Estimates of population for this area are unobtainable, but in some parts it is known to be scant because of the ravages of sleeping sickness in earlier years.

This area is occupied by a number of relatively small tribes whose total number probably does not exceed 100,000. Administrative functions of each tribal community are performed by chiefs of various ranks who are responsible to a paramount chief. These ranks, in general, are not hereditary, although relatively important positions usually remain within a few leading families. Appointments are normally made by the chiefs in consultation with their elders.

Land ownership prior to European colonization was vested in the tribe, but individual land ownership now prevails in a number of areas. All crops grown on the land belong to the cultivator, regardless of condition of ownership.

FACTORS AND DEVELOPMENTS THAT MUST BE CONSIDERED IN AN EFFECTIVE EXTENSION PROGRAM

The whole of this area has had a settled administration for the last 40 or 50 years. Political and racial issues are not today of sufficient importance in the mind of the average farmer to have any profound effect on extension methods. In the future such problems are likely to become of increasing importance, and clearly defined objectives are necessary if rapid progress is to be achieved.

Religion plays a large part in the lives of Africans, and inculcation of ethical standards of behavior must be an integral part of a successful program of extension in central Africa.

Nearly all African tribes in eastern and central Africa are in a period of rapid transition. Contact with European ideas has upset the established culture. All extension workers must realize that the present is the time of great opportunities.

This region has already passed beyond the stage of pure subsistence living. Peace and orderly administration have encouraged rapid population increases. In some areas, these increases have made shortages of land a problem, and nonagricultural resources have not been developed with sufficient rapidity to absorb the population surplus. Population has moved out to get work or to farm elsewhere. Capital to develop agricultural and mineral wealth is required. Provision of water supplies is perhaps the most important problem. Also important are provision of transport and roads and tsetse clearance to open up areas suitable for resettlement.

The main results of lack of developed resources are (1) malnutrition, periodic food shortages, and "hungry gap" seasons; (2) lack of education; (3) ill health; and (4) lack of opportunity to acquire wealth and prestige as reward incentives.

These problems create a vicious circle and can only be solved by developing resources, education, better nutrition and health services, and creating incentives for accumulating wealth.

In recent years, important effects of the breakdown in tribal organization have been noted. As a result of lack of authority, increased leisure, and breakdown of organized recreational activities such as dancing, hunting, and tribal ceremonies, drunkenness and immoral practices have increased generally.

Division of labor is clearly defined. Usually the women do household chores, grow the food crops, and collect water and firewood. Men's work includes care of livestock, bush clearing, some field work, housebuilding, and administrative activities. With increased areas under cultivation, because of the introduction of cash crops, there is a tendency for women to become completely overworked and for men to take an insufficient share of the total work. Extension methods must insist on lightening wasteful work done by women in collection of water and firewood, grain threshing and grinding, as well as in reducing field labor.

Existing extension techniques and committee recommendations

Scientific information on farming methods in east and central Africa is well ahead of application. More research and increased attention to full utilization of the capital and labor resources available are required. Methods recommended must be economically practicable within these limits. The greatest lack is adequate means of getting the farmer to accept new ideas. More capable extension agents are required. A person's capability for this work depends primarily upon personality, but training for extension work is essential. Though the staff available in some territories is relatively large, frequently it is not well trained. More competent people to do staff training are required, and improvement in quality is probably more important than quantity. In general, the extension agent and the farmers among whom he works should belong to the same tribe. Much success cannot be expected until a general improvement of educational standards makes this possible.

Most of the educated Africans going into agricultural departments should enter the extension rather than the research side. To insure that a proper proportion of educated African men and women—and they are still scarce in this area—go into extension services, the prestige of the service must be enhanced by giving it a professional status. Insistence on the maximum feasible standards for entry, fostering a high standard of professional behavior, arrangements that allow members of the profession to meet together to discuss their techniques, make suggestions for programs, and air their grievances are aspects of professional status as important as are salary scales and terms of service. In some east and central African colonies such considerations will appear as matters to be considered in the future, but experience elsewhere suggests that changes may be more rapid than we expect, and agricultural extension workers might, with advantage, get as good a start as doctors, teachers, or veterinarians.

Ethiopia

Basic extension problems

Ethiopia is one of the few countries in Africa that are not overpopulated. The sole livelihood of 99 percent of Ethiopia's population, estimated to be 10 to 15 million persons, is derived from agriculture. Of the total estimated area of 350,000 square miles, about 11.5 percent, or some 26 million acres, are believed to be cultivated lands. This region is particularly fortunate in having good soil, a varied climate, and plenty of rain. Rainfall averages 49 inches, but is as high as 72 inches a year in parts of Kafa Province. Because of the heavy rainfall during about 3 months of the year and the rugged terrain, erosion causes considerable damage to crop areas.

The major problem in the development of Ethiopia is education. Without an awareness of the need for change on the part of other than a handful of people, no progress can be made in improving the life of the country. Bringing about this awareness is the first job of extension. Without some education and training of the people, it is not possible to increase the efficiency of agriculture, establish industries, and improve living standards. Along with the lack of education, the administrative organization of the country is not adequate to enforce constructive laws and regulations. Until it is possible to attain such enforcement, taxes cannot be effectively collected. Without such collection, constructive measures cannot be put into effect. Improvements of this nature are again a matter of education in its broadest sense.

In the field of education and extension, some useful work is under way. A community improvement project, initiated by the Emperor in 1943 at Tebasse Kesse, is outstanding in its concept and execution.

It consists of a school, clinic, communal laundry, and bath with facilities for heating water, and a cooperative store; provides adult instruction in handicrafts, vegetable growing, home sanitation, and better housing; and includes a community organization that fosters constructive competition between individuals and families. Presumably, if this project proves to be permanently successful, it will be extended to other communities.

The lack of transportation facilities and of means of communication interferes seriously with the progress of education and improvements in the administrative organization. To some it may seem that nothing can be done about education until the production of the country is increased sufficiently to support it, and therefore increased production and greater income would seem to be the major or basic problem. Increased income should, however, come first from producing and marketing better cured and higher grades of products such as hides and coffee. But without education as to how these improvements can be accomplished, and without trained personnel to carry on such work, no increase in income to support education can be realized.

There are also several government farms, many of which were established by the Italian regime as experiment stations. These are so inadequately staffed and equipped that they are of little, if any, practical assistance to agriculture. Some experiments have been made, however, with the introduction of disease-resistant strains of wheat from Kenya and some purebred beef and dairy cattle from the United States. Assistance from other countries or international organizations in the form of technical service or extension is believed to be the key to improvement of this situation. The agricultural methods of the country, where they differ from those of other countries, may be found well justified by the peculiar topographic or climatic conditions, so that change to certain foreign methods might be harmful. Each question must be considered on its merits, without any preconceived idea that methods approved by agricultural specialists in other countries will necessarily be best here. Special research will often be necessary to answer such questions.

Committee recommendations

The education most needed is the informal type that will arouse interest and awareness of need at all levels, from that of top government officials out through the provincial officialdom down to the villages and rural communities. The field is wide open for extension activities as commonly understood in this country. However, these must be accompanied by, and in many cases preceded by, educational activities with government officials to awaken them to the needs of the people and the opportunities for assisting them. These educational activities with all levels of governmental officialdom must make officials aware not only of basic problems but of organizational deficiencies and possible remedial measures, including financial and personnel requirements. The lack of effective organization is, of course, based upon failure to realize how constructive educational methods can be used to influence the people. The Government is generally considered only in terms of control and regimentation.

Although the awakening of interest is the starting point in attacking the problem of education, thorough and careful planning with people at all levels over a long period of time will be necessary to achieve any noticeable progress in solving the problem. However, such work through adapted extension techniques accompanied by an increase in formal education for the coming generation would provide considerable acceleration in progress when these better trained young folk come to accept community and higher responsibilities.

Awareness in regard to this program should encompass all major fields, such as health and nutrition; agricultural production and storage; marketing and distribution; land use, including crops, grazing, and forestry in relation to maintenance of fertility and conservation; and the relationship of government to its people and resources through education and control measures, particularly with respect to diseases, pests, marketing methods, and forests.

Liberia and British West Africa

Though the climatic and agricultural conditions in Liberia and much of British West Africa are fundamentally the same, the fact that they have different administrative systems has caused us to consider them separately in this report. We did not include French West African or the Belgian territories because there was not sufficient time for the French representative on the Committee to collect accurate information on the items and specific problems suitable to the committee needs.

Liberia

Liberia is the only republic in the continent of Africa that lies wholly within the tropical-rain forest belt of the West Coast. It extends over an area of approximately 43,000 square miles and has a population of an estimated 1,250,000 persons, divided into two distinct groups, native and Americo-Liberians.

The topography of the country is marked by a narrow level coastal land and rises rather abruptly from the sea into rolling country and a series of ill-defined plateaus averaging from 600 to 4,200 feet above sea level.

The bulk of the population lives in tribal villages and derives its principal subsistence from small-farm agriculture. The tribal-organization type of agricultural production and patterns of living in west Africa are to some extent similar to those in east and central Africa. Liberia's potential wealth and immediate possibilities lie in her soil. A very limited amount of work that might be classed as extension is already being conducted by government officers and employees, private organizations, and missionaries, most of the missionaries having come from America. This work, however, needs to be coordinated, developed, and greatly expanded.

The major problem of this agricultural area is the inadequacy of peasant-farming methods in supplying either a sufficient quantity or an adequate quality of food. Present production fails to reach the subsistence level.

A successful extension program in Liberia will depend upon the following factors:

Organization.—A more effective organization needs to be developed through which agricultural extension work can be promoted. This would require a complete program for better rural living.

Education.—To build a more effective extension service, a program of in-service training and teaching of extension workers is needed. An expanded program of elementary education is essential to render such a program serviceable. Mass education, including teaching through visual means added to these efforts toward literacy, could play a useful role in imparting the necessary information to a people, 80 percent of whom might be classed as primitive.

Research.—The sound knowledge gained through proved practices, together with elementary education, is essential in developing a good extension program. Basic research is needed, directed at the problems of rural life, including subsistence farming, soil and forest conservation, disease control, and development of cash crops.

Liberia's principal cash-export income-producing agriculture will lie in her tree and forest crops, such as rubber, palm oil, cocoa, and piassava fiber.

Credit.—The establishment of a system of agricultural credit is needed.

EXTENSION TECHNIQUES

The principles used by the Extension Service of the United States Department of Agriculture might be used in cooperative production and marketing efforts, built on existing tribal organization and experience in other parts of west Africa. It will be necessary, however, to adapt these practices to the conditions, customs, and practices of the indigenous people who need help. The people of Liberia are eager to learn. Liberia, given the advantage of western skill and know-how, can serve as a demonstration of what can really be accomplished in an undeveloped tropical area.

British West Africa

The portion of the African continent known as British West Africa occupies an estimated 496,525 square miles. It is inhabited by some 30,000,000 people, as compared to 3,000,000 square miles of land area in the United States and a population of 131,669,275. Agriculture is the main occupation of the people and is engaged in almost entirely by native peasant farmers.

Perhaps the major agricultural problems facing British West Africa are check of the swollen-shoot disease in cocoa, the extension of rice and ground nut (peanut) production, and the necessity to persuade people to improve their systems of farming. In addition, to utilize fully the potentialities of this area, the tsetse fly must be controlled if not eradicated, thereby enabling an increase in cattle numbers, which in turn should provide more meat for human consumption and assist in the establishment of more balanced systems of farming.

The whole of British West Africa is organized and administered on the basic unit of the family and the tribal group. Native authorities are responsible for the administration of their immediate areas with the advice and assistance of government technical and administrative officers. There are a number of agricultural research centers in the territories as a whole and the results obtained from research there have been extended to the people by officers of the respective departments of agriculture and by district administrative officers posted in the various parts of the country. The information they disseminate to the native administrations is passed on to the people by the chiefs and elders and then from family to family and person to person.

In various parts of the territories unit farms have been set up by the agriculture departments, where approved modern methods are demonstrated under conditions the farmer experiences in his own environment. These farms are operated by the peasant farmers and their families, who are paid an agreed wage and required to manage the farm along prescribed lines. Progress is continually being made in soil conservation and antierosion measures in the northern areas, where drought conditions are a major problem.

EXTENSION TECHNIQUES

A considerable amount of extension work has already been performed in British West Africa, especially the Gold Coast, but considerable expansion of programs still is needed. To further this expansion an increase in staff numbers would be necessary and should consist of natives of the territories concerned who have been trained either in their own country or abroad in modern extension methods and techniques. This could probably be done in the various territories at existing agricultural training schools if extra teachers were added who were specialists in extension methods. In the Gold Coast, for example, colleges for agricultural training are in the process of being established. Research is being carried out in centers at Tafo, Kumasi, Pong Tamale, Tamale, and other placed. Demonstrations are being carried on and publicity is being conducted by agricultural officers and district commissioners in conjunction with native administrations. Experts, including those made available by the United States Economic Cooperation Administration are visiting research institutions and specific areas to advise on cures for various ills. An agricultural bank has been set up recently to take up existing mortgages and ultimately to free the farmer from debt.

Elementary education is fairly widespread, although school attendance could be higher. Some elementary agricultural instruction is included in the curricula of these schools. More accent on simple agricultural problems could be given in the elementary schools. At present experimentation in mass education is being made in hygiene and health measures, social development of the community, and agriculture by teams of instructors that tour the main centers of a given area. If this scheme proves successful, and the indications are that it will do so, it will be extended considerably, and agricultural extension methods may well form a part of its function.

The following methods for furthering extension could be introduced: Greater cooperation by missions in their educational centers—the inclusion in mass education teams of African agricultural officers able to introduce new or proved ideas or both; cooperation between United States and British research organizations; and provision to Africa by western countries of information about their latest extension techniques and training in the use of more modern tools and equipment.

Conclusions

Africa, south of the Sahara, is, except for some European farming and mining, primarily a vast rural area inhabited by peasant farmers and herders. These are in varying stages of transition from a subsistence to a cash economy and from a tribal organization to a more modern, but not necessarily more satisfactory, stage of social development.

Natural resources, such as land, minerals, and water power, are relatively undeveloped. The standard of living is low and there is much poverty. The problem is to alleviate this poverty by helping the African to develop the resources and thus raise his standard of living.

At present, however, illiteracy, poor health, and malnutrition prevail in many areas. Without better health through the control of malaria and the tsetse fly, and better nutrition through increasing food production and improving food storage, the people have not enough strength to open up new potentialities of wealth. Without more education and further attacks on ignorance and illiteracy, they cannot acquire the know-how to exploit their resources. Without new incentives to replace indigenous systems that measure wealth and prestige in ownership of cattle and wives, there cannot be the will to seize the opportunities that western scientific knowledge has laid and is laying on the threshold of the African's mud or wattle hut.

The trouble is that without better health, better food, better education, and new and socially acceptable incentives, natural resources cannot be exploited. On the other hand, until these resources are developed, the governments and peoples concerned cannot readily provide the needed health and education services. The big question, therefore, is where to break the vicious circle. Some members of the Committee on Africa thought that a start should be made with education and health services. Others felt that the development of resources should receive priority. But though individual opinions differ as to where one should attempt to break the cycle, there is general agreement that whether priority is given to health, education, or development, the first thing to do is to seize the interest of the African, create a will for self-government, and help him to helf himself.

The principles governing extension work are the same, whether the immediate object is to check soil erosion, make use of new drugs for malaria control, or agree to a reallocation of land so that a hydroelectric scheme can be started. The Committee has concluded that the following extension techniques apply rather largely to Africa as a whole:

1. Extension is in every stage of development. In some areas it is practically nonexistent. In some of the British colonies it has reached the point where there is one trained African instructor to every 300 or 400 farm families. Effective extension work is closely integrated with regulatory work. There is little advantage and possibly considerable danger in trying to separate them.

2. The tools of extension in Africa are essentially the same as in western countries: The written word for the few who can read; films, slidefilms, and demonstrations for those who would attend meeting; the spoken word passed down through the tribal authorities to the villages and from hut to hut for those who cannot read or attend meetings. The spoken word—informal talks and gossip rather than mass meetings—is the most effective, even though it appears to be slow in getting results.

3. The tools selected for the job and the way in which these tools are used must be "custom-tailored" to meet the needs, the social background, and the customs and beliefs of each tribe within each broad racial group. The approach must be through the tribe, the clan, and the family. It must be based on creating African confidence and trust in the advice of the individual extension man. This means that the best work is probably done not by white men but by Africans who, after training, return to their own tribal kin and work among them. The white man, whether he is an agricultural official, a missionary, or a settler, has, of course, an important part to play through his leadership and example. But real "grass roots" extension is primarily a job for the properly trained African.

Needs for future improvement and expansion of effective extension work in Africa relate to:

Finance.—Many African countries are too poor or too unsettled to have substantial sources of taxable income, hence lack enough funds for extension work.

Research.—Western civilization began to reach Africa only in the last 50 or 60 years; that is, later than the setting up of the land-grant colleges in the United States. Much remains to be found by research and experience before foolproof methods of farming, adapted to the needs of each locality, can be freely advocated.

Education.—The need in education is, first, to provide native leaders and extension men and, second, to increase the receptivity of the ordinary peasant farmer. Some members of the committee would reverse the order of these educational priorities, but all agree that education is essential.

This, however, must necessarily be a slow process. The African must be taught how to walk with simple knowledge before he can run with modern technical know-how.

Trained technicians.—More good African extension men are needed. They must be well-educated, well-trained, enjoy a good social status, and be willing to stay on the job. Ten good men for 10 years would be much better than 200 men for 1 year. Educated Africans have a tendency to seek jobs with the government or in the medical service because these jobs offer more prestige than does extension work within the tribal or village group. Hence, the social status of African extension workers should, where possible, be raised.

Patience and understanding.—Among the most important needs for a successful expansion of extension work are patience and understanding. Patience because western know-how, however reliable it is to us, may not initially be convincing to the African. Understanding, because without a careful and sympathetic appreciation of social background of the values that appeal to each particular tribe and the incentives motivating them, extension work, however well financed and intensive, is foredoomed to failure. Africans cannot enjoy the fruits of western know-how unless the varieties that will suit local conditions are carefully grafted onto indigenous local stocks.

COMMITTEE MEMBERS: A. N. Duckham, British Embassy, Washington, D. C., Chairman; John Adair, Department of Sociology and Anthropology, Cornell University, Ithaca, N. Y.; Claude A. Barnett, The Associated Negro Press, Inc., Chicago, Ill.; T. M. Campbell, Extension Service, United States Department of Agriculture, Tuskegee Institute, Ala.; May Cresswell, Agricultural Extension Service, State College, Miss.; R. K. Kerkham, Uganda, Africa; Flemmie P. Kittrell, Howard University, Washington, D. C.; Mary E. Long, Office of Foreign Agricultural Relations, United States Department of Agriculture; Oscar W. Meir, United States Economic Mission to Liberia, Division of African Affairs, United States Department of State; P. K. Norris, Office of Foreign Agricultural Relations, United States Department of Agriculture; William E. Reed, Agricultural and Technical College, Greensboro, N. C.; E. H. Roach, Accra, Gold Coast; Arthur T. Semple, Food and Agriculture Organization of the United Nations; Ruth C. Sloan, The Near East and African Bureau, United States Department of State; Curtis C. Strong, The Near East and African Bureau, United States Department of State; J. E. Thacker, Methodist Board of Foreign Missions, New York, N. Y.; Mrs. J. E. Thacker, Methodist Board of Foreign Missions; Clifford H. Willson, Program Division, United States Department of the Interior.

The Balkans

Greece and Turkey

Greece

The extension worker in any country must understand the social as well as the economic problems of the rural people in that country, the organization of the family and community, and the reasons behind their actions. He should have the concept of "improvement" rather than of "change"; of building on the foundation already in existence instead of tearing down this basic structure of customs and practices.

These are some of the basic situations in Greece that need improvement:

- The limited amount of arable land is divided into too many small, scattered strips.
- Yields per acre, per animal, and per man are too slow; costs are too high.
- Methods of farming, processing, storage, and marketing are primitive; facilities, water, fertilizer, seed, pesticides, and tools are inadequate, and credit is insufficient to obtain them.
- Government officials lack practical training, extension knowledge, a "public service" point of view; they are burdened with regulatory duties. Not enough educational work is done.
- Rural people have little training or opportunity for training in better family living and in the care and rearing of children.

The following discussion shows how these fundamental situations relate to several specific problems of Greek rural life.

Provision of essential foods

Present situation.—Not enough food is produced to feed the people of Greece. In rural areas milk is available only during the spring months, vegetables and fruits are available for a short season only.

Animal protein is lacking, as the meat supply is exhausted soon after the animals are butchered. Not enough dried legumes are raised, and some of those raised are destroyed by insects. Food is lacking in variety and quantity throughout the year.

No study has been made of the methods used by farmers in the preservation of foods. Some of these methods are sound and need little improvement; others, such as brining, need more study and improvement. In general, canning as it is practiced in the United States is not feasible for the farm family in Greece, because containers and equipment are very expensive, families as a rule do not produce a surplus for canning, and fuel is scarce in most communities. Furthermore, the growing season for vegetables in Greece is longer than in most countries where canning is practiced, and, where there are transportation facilities, fresh vegetables are available throughout the year.

Obstacles to improvement.—Milk animals are not bred for porduction, and no feed is provided to supplement the seasonal pasture for these animals. Pasture and forage are lacking; the care and the management of animals are poor; water and fences to protect gardens are needed; food habits and prejudices are basic problems.

Persons properly trained in food preservation are difficult to find, and the Government's services to train people in production of crops and care of livestock are inadequate. No government services have ever given attention to increasing the varieties and quantities of vegetables grown, nor are there facilities or organizations for aiding the family in preservation of foods or control of insects that destroy the foods. The farmer has no sources of information on these subjects.

Extension approaches for solution of the problem.—Extension should include as one of its objectives, encouraging and helping farm people to grow a greater variety of foods throughout the year. The absence of variety in food preparation is due partly to a lack of fuel and partly to the fact that the farm wife is overloaded with work, but some practical suggestions can be of considerable aid, such as showing how to make and use fireless cookers. As the modern, improved methods of food preservation are too costly for the average farmer, probably the most economical way of handling equipment and material for preservation is through cooperatives.

Extension should select key farmers from each community who would carry out projects in producing new foods and improving methods of production. It should work with leaders of the community and, through them, crystallize a program for a year or for 5 years—a program that comes from the people themselves.

Sanitation

Present situation.—Diseases are prevalent throughout Greece because of lack of (1) water, (2) provision for disposal of waste, (3) control of pests, and (4) medical facilities. Other basic reasons for poor sanitation are economic difficulties, lack of understanding and interest by rural people, and insufficient state interest in sanitation and health. Very little is being done by local people or by the state to provide better sanitation.

Extension approaches for solution of the problem.—Under state guidance, the cooperatives and the community might provide some funds and labor for such improvements as increasing the water supply, draining swamps, keeping community surroundings clean, and building proper latrines. The carrying out of these improvements should be under the supervision of a trained health officer.

As has been pointed out, the farm woman is overworked and so is handicapped in the care of her children and in the development of family life. She has little time, and as yet even less concern for sanitation and other problems of family life. This is an accepted cultural pattern and therefore difficult to change. A feasible approach might be the development of centers for the care of children during periods of heavy field work, as a demonstration of the best methods of child care. Efforts might also be made to enlist the interest of teen-age girls in helping with these centers.

Rural youth

Present situation.—There are six grades in the Greek elementary school and six grades in the high school, or gymnasium. Schools are supported by the central Government and teachers appointed directly from the ministry in charge of the schools, be that education agriculture, welfare, or other ministries. Although elementary education is presumably compulsory, nearly half of the pupils are out of school before they reach the fifth grade, and not more than 35 to 42 percent complete the sixth grade. A relatively small percentage of rural boys and girls go to high school for economic reasons, and because of the types of programs offered. The majority of rural youth are out of school by the time they are 12 or 13 years old.

The 10 agricultural high schools enroll village boys for 2 years. In the past some have operated 4-year programs. Very much the same courses offered in the college of agriculture are offered in the high schools, except that in the high schools an effort is made to adjust instruction to the level of the learner. Between 300 and 400 boys complete the courses each year, taking classes half of the day and working on the school farm the other half. Approximately half of these boys return to the village farms very young, and only partially trained for farming. Since more than 40,000 young men enter farming each year, the agricultural schools are training no more than 1 percent of them.

Recently Parliament passed a law known as 920, which provides for organizing and teaching out-of-school village youth. In 1948, 10 teachers working cooperatively for the Ministry of Agriculture and the Near East Foundation were carrying on such programs. An additional 15 teachers were given short, intensive training during the summer of 1948, and 10 women were trained to work as homemaking teachers. (Actually only 4 of the women accepted jobs in the villages.) The plan under law 920 is that the teacher will work in four or five different villages.

Some years ago, the Near East Foundation helped to develop the Future Farmers of Greece, patterned after the Future Farmers' program and the 4–H Clubs in the United States. This organization has not functioned during recent years, and the only organizations for youth now in operation are the Boy Scouts, Girl Scouts, and some groups in connection with the church (orthodox).

Obstacles to improvement.—There is lack of properly trained personnel and of funds with which to pay adequate salaries to leaders or workers. The only places available for meetings with rural youth or adult farmers are the schools, which operate 6 days a week. The 400 agronomes (county agents) are required to spend much of their time in gathering taxes, handling refugees, and doing regulatory work involving feeds, fertilizer, fuel, and spray material. They must be relieved of many of their present duties if they are to give the needed attention to rural young people.

The Superior School of Agriculture at Athens and the college of agriculture at the University of Salonika give primary emphasis to the development of technical or research specialists and not of extension leaders or teachers. The development of a specific program of professional training should be made a part of the total training program. Educational leaders often are not acquainted with rural problems, and the curricula have little bearing on these problems. Government workers and teachers are decidedly underpaid.

There is little application of research to farming, and most important farm problems are not included in the research program. Farming is looked down upon as the profession with the least prestige, and the feeling is general that the farmer does not need education. The farmers themselves, however, realizing that they are the largest segment of the population and their contribution to the national income is the largest, feel that they are neglected by the Central Government. Only through sacrifice by farmers can most rural youth attend high schools or universities which are always established in urban areas, for the isolated cases of rural scholarships are not sufficient to meet the needs of the rural people.

Extension approaches for solution of the problem.—More trained leaders can be prepared to lead an informal or systematic instructional program to develop needed abilities and attitudes among the young and to help them cope more effectively with the situations with which they are confronted.

Erection or conversion of buildings with usable meeting rooms for instruction, recreation, and social activities should be stimulated by the central Government and built or provided by the village people. Youth organizations for boys and girls should be formed; both should grow out of the instructional pattern and become a part of the training program for rural youth. More arrangements should be made for publishing and distributing simple leaflets and bulletins dealing with needed improved practices in farming, homemaking, and community life. Concern for change comes from village fathers and mothers, rural youth themselves, church leaders, and a number of people in the central Government, although not a sufficient number. There should be general acceptance by the Greek Government, the banks, the cooperatives and other groups and individuals that the most important product of Greece is its young people.

Those who believe in democracy should be concerned with stimulating more effective programs of education for rural youth. Undirected, untrained people with little hope offer rich opportunities for communism and other totalitarian philosophies.

Irrigation

Present situation.—Since Greece is a semiarid country, farm production is limited by a deficiency in rainfall during the long, hot summer months. Because of the denuded and eroded character of the mountains and foothills, the heavy rainstorms during the winter result in floods that inundate thousands of acres of land, destroy standing crops, and often do damage to villages located in the course of the torrent flow. During the flood period, large areas of potentially valuable land are turned into swamps that remain as sources for the spread of malaria.

Production in Greece is limited by the fact that, because of lack of electrical energy, most pumping from irrigation wells is accomplished by means of burros, horses, and oxen. Production per man both on farms and in towns is relatively lower than in any other country in Europe. Development of summer irrigation could increase production materially in the great plains area. The needed construction of dams for flood control and for storage of water for irrigation also would permit development of hydroelectric power that could supply cheap energy for use in rural villages.

The solutions of the problems of flood control, drainage, irrigation, and power development are all involved in a multiple-purpose watershed program of river control and development. The present reclamation programs of the Ministries of Public Works and Agriculture contemplate the completion of projects within the next 3 or 4 years that will reduce flood damage by two-thirds, eliminate two-thirds of the present drainable swamps, provide water for more than half of the potentially irrigable areas in Greece, and provide for the development of substantial hydroelectric and thermo-power for distribution to both urban and rural centrs.

For some years the Ministry of Agriculture has attempted to meet the problems by a service designed to provide mechanical means of cultivation for whole communities. The Ministry of Agriculture and the Ministry of Public Works, the principal agencies now furthering the development of agriculture, include engineering services, the mechanical cultivation service, local agricultural agents of the Ministry of Agriculture, colleges of agriculture at Athens and Salonika, and investigational agencies such as the Cotton Institute in Macedonia. The Government handles the extension as well as the educational work, and the local organizations such as unions of cooperatives, credit organizations, and community boards are not consulted or asked to participate in this work. The extension job is done by the local agricultural agents representing the Ministry of Agriculture, but their usefulness is greatly lessened by their many regulatory responsibilities which in some cases take all their time. To help save their time, effort is now being made to provide all county agents with jeeps or other small cars to enable them to get from community to community.

Experience has shown conclusively that an expansion of the extension service approach to rural education is needed to obtain participation of farmers in conservation programs. In some places where irrigation has been developed without continuing participation on the part of farmers in the planning process, a large proportion of the irrigable area has remained unirrigated. This retarded development can be overcome by an expansion of the extension program, which calls for consent and participation on the part of local people.

Obstacles to improvement.—Perhaps the most serious obstacle to flood control, drainage, and development of hydroelectric power is the lack of capital. Some extensive drainage projects were initiated in the twenties with the aid of foreign credit, and other projects are under way in all parts of Greece through the use of Economic Cooperation Administration money. Without foreign aid the Greek people would have difficulty in carrying through any effective reclamation program.

Continued internal strife and foreign wars have been a major cause of retarded development. The highly centralized character of the Greek Government has limited the ability of the people in rural areas to create projects on their own initiative. This lack of initiative is in part the result of a long-continued feudal rule under Turkish domination, with the Greek peasant a serf operating under Turkish overlords. Again, the lack of credit for the individual has made it impossible for persons of more than average initiative to secure a foothold.

The small size and scattered character of farms form a physical obstacle to the introduction of modern methods in agriculture. The system of scattered farming is a result of several factors. For example, fertility of the soil is not uniform throughout the village area, hail and storms might destroy crops in one section, frost might damage crops in low-lying areas, water for irrigation might be limited to only a small area, each field has to be divided among claimers in accordance with inheritance customs, certain land is more suitable for certain crops. It is common to have one total ownership limited to 3 or 4 acres and divided into as many as six to eight separate parcels, sometimes many kilometers apart. As a result, farmers depend a great deal upon hand labor and are forced to use inadequate equipment when they rely on their own resources. Because of the war, draft power and farm equipment were reduced drastically, which obliged the farmers to utilize available equipment and machine power cooperatively. Tractors had to work across fields without regard to field barriers, yet each farmer was able to get his share of the produce, depending upon the size of his lot. This cooperative action could expand to include many agricultural practices that probably can be handled only cooperatively, since the economic limitations for independent action on the part of the individual farmer, except through cooperative action, are becoming stronger.

The activities of the rather well-developed cooperative organization that serves almost all of the agricultural areas are confined almost wholly to buying and selling equipment and supplies needed by the farmers, but some effort is being made to organize local cooperatives for cooperative operation of mechanical equipment. The cooperatives feel that they are not able to introduce improved agricultural practices under the prevailing system of field division, but that any system allowing unified cultivation and exploitation of the land without upsetting the system of land ownership would aid greatly in increasing farmers' income. Even though in some areas cooperative plowing, seeding, and harvesting have been carried out with satisfactory results, more educational work will be needed to convince owners of the economic value of adopting such schemes, because ownership of his land is extremely important to the farmer, and many farmers fear that if the fields are combined for economic exploitation, ownership may eventually be lost.

Extension approaches for solution of the problem.—Before any flood-control, drainage, or irrigation projects are approved for construction, the people in communities affected by these developments are consulted and their consent is obtained. Consent is not felt to be enough, however, and an effort is made in each case to insist upon participation. This participation is exercised in the planning stage by consultation with committees appointed by the communities, and later by the organization of legal community entities that will assume the responsibility of operation and maintenance and repayment of the costs connected with such work.

In approaching this problem, the practice is to meet with all the people of the community in a general gathering, where the whole problem is presented and discussed. At such meetings a vote is taken as to whether or not the community wishes to participate. If the result is positive, committees are appointed to cooperate with the federal agencies involved in service planning and construction. In all these meetings the local agricultural agent, who is the representative of the extension service of the Ministry of Agriculture, takes a leading part. He usually calls the meetings, assumes the initial chairmanship of them, remains in the community as a follow-up agent, and supposedly keeps in close touch with the committees created. This method of approach has proved to be almost universally successful. Experience has shown that the communities are always willing and anxious to cooperate and carry their part provided, again, that they recognize the program as a practical one. Since the advantages of flood control, drainage, and irrigation are obvious, means for cooperation have always been forthcoming and cordial. When it comes to community action the Greek is instinctively trained. For 500 years under the Ottoman Empire, he learned that in order to preserve schools, churches, and other institutions, cooperation and sacrifices are necessary. This attitude and custom have become a part of his long-established culture concerning his community needs.

Concern for change

The concern for change is a basic cause for the present political unrest in Greece. The Communist group wishes to initiate revolutionary changes immediately and is reluctant to accept the evolutionary programs suggested by the more conservative elements at the other extreme, while the highly conservative group is satisfied with the status quo and is more concerned with preventing change than initiating it. The people in general, including both farmers and organized labor, are conscious of the need for changes that will raise the level of living by increasing production and employment. Their concern is shown by their eagerness to cooperate with any agency that can give them the aid they themselves recognize as essential. Through such cooperation they have made achievements in such fields as artificial insemination, better seed, local committees, homemaking centers, and transportation for county agents. Farmers are not willing to vary their present practices unless the beneficial results of the change have been well demonstrated, but this conservatism is valuable because it saves them from exhausting their limited funds and resources on impractical or impossible schemes.

Conditioning characteristics of the Greek culture

The Greek people have a rich cultural heritage and are proud of it. They love freedom, independence, and democratic ideals to the extent that they understand them; they are most hospitable and have sentimental attachments to the glories of the past. This is reflected in their school program, which is decidedly classical as contrasted with functional and remains parallel to life, not touching it in many places. Without appearing to be critical, one might say that many leaders in education have their faces to the past and their backs to the future. This situation makes it essential that leader-training programs precede and accompany effective training programs for rural youth.

The greatest factor concerning the culture of the country involves the small size and scattered character of the farm holdings. It is hoped that the study now being made of this problem will result in an overall approach applicable over a period of years as the industrialization program of other divisions of government lessens the pressure for the subdivision of land into smaller and smaller holdings.

Although it is true that in the approximately 20 years of extension work in Greece the people have made achievements in several important fields, the extension program must have still broader application of the techniques mentioned above or similar ones, if the vital problems are to be solved.

Turkey

Agriculture is the backbone of Turkey. Although industry and commerce have increased with the coming of the Republic, Turkish exports are 90 percent agricultural products, about 80 percent of the workers are engaged in agriculture, and about 45 percent of the national income is from agriculture. The rural level of living, however, is still low in comparison with that of other countries.

Five inadequacies are at the base of most of Turkey's rural problems:

1. The farmer does not have enough land.
2. Draft power and modern implements are insufficient to prepare soil, and to plant and harvest crops on time.
3. Good seed is needed.
4. Storage and marketing facilities are lacking.
5. Education, not only in improved farming practices but in improved family living, is inadequate.

Treatment of specific farm and home problems is included in this report within the discussion of each of these general fundamental inadequacies.

Insufficient land holdings

The present situation.—The Turkish farm consists of communal and private land. Communal land, usually grazing meadows and forests, is subjected to unlimited use by all the villagers; the arable land, on the other hand, is private property. Very small farms predominate. Of the total cultivable area, estimated at 73 percent of the total area, less than 20 percent is under cultivation either in field or tree crops and the rest is in pasture. A third of the cultivated land is in fallow each year, with the fallow period ranging from 2 to 4 years. Possibilities for increasing the crop area are obviously great.

Governmental aid to farmers has taken several forms, including abolishing the tithe and reducing direct taxes, granting credit at low interest rates, and developing agricultural cooperatives. In 1945 a national land law was passed to increase the size of rural holdings and distribute land to those who were without it.

Extension approaches.—Newspaper and radio publicity and discussions in the "public rooms" in each village have afforded a medium for explanation and for getting popular acceptances of the land law. The first Sunday after the passage of the law was set aside as an annual national feast day. Where there are schools or experiment stations, the Government underwrites the expenses of the occasion. Where there are no such institutions the villagers celebrate the day with dancing, singing, and speeches on the adoption of the law and its benefits for the local people.

Draft power and implements

Present situation.—In the cereal belt, fields must be plowed in time for seeding in early October, and the draft animals now available are frequently unable to finish until later. This results in poor yields. Lack of equipment and draft power also hinders the peasant in harvesting and threshing.

The three sources of draft power in Turkey are cattle, horses, and tractors. Although government breeding stations are seeking out the best types of cattle for draft power, meat, and dairying, the results of this research often do not reach the farmers, and little progress has been made in improving the quality of cattle. Much remains to be done in teaching the peasant how to feed and care for animals to increase the meat supply and make cattle raising more profitable. Considerable attention has been given to horse breeding. Special horses are bred for horse racing, and persons who can afford horses use them not only for field work but for transportation. Use of the tractor is increasing as farmers observe its speed.

Extension approaches.—The large model farms have made tractors popular by renting them cheaply to farmers, many of whom now want to buy them. Extension should develop methods for bringing to farmers the results of research now going on, as well as results of past research.

Seed

Present situation.—Because the Turks have been a pastoral people and cultivation of many crops is recent, introduction of new crops and expansion of those already cultivated would be well received. Since the inception of the Republic, Turkey has given more attention to introduction and expansion of crops that were formerly imported, and to irrigation and drainage. The increasing cultivation of sugar beets is an indication of the possible future of other increasingly important new crops such as soybeans, tea, and bananas.

Research on seed quality and new varieties is being carried on by the agricultural experiment stations. During the Second World War, 13 large combine farms were established to increase bread-grain production. They have since been transformed into centers for training farm youth in the operation, maintenance, an utilization of farm machinery and for large-scale production of good seed, livestock, and fruit trees. Seeds are cleaned and dusted without charge for the farmers at these centers.

Extension approaches.—Whenever superior seeds are discovered by the experiment stations they are given to the peasants and sometimes even planted by government employees. Especially in the areas near experiment stations, many farmers eventually have become willing to exchange their seeds for experiment-station seeds. When convinced, the farmers are willing to buy the seeds at a price equal to the regular market price, if they have enough money.

An illustration of the effectiveness of this method is the introduction of safflower, an oil-bearing thistle. Those who visited the experiment station were given a pint of the oil to take home and use. When they found that they liked it, they began to grow safflower.

Storage and marketing facilities

Present situation.—One of the problems involved in the rural level of living is the lack of outlets for agricultural products and the failure of the peasants to produce for a market where they receive enough income to buy goods, which would raise their level of living. The ultimate aim of most Turkish farmers is to produce enough crops and raise enough livestock for their family needs and a limited surplus for exchange of those things they cannot raise or make. Thus, their marketable surplus is relatively small.

Improved roads and highways now being constructed should do much to open markets for farm products, but marketing methods are still primitive and wasteful. Animals are driven long distances to market or to export ports, and actual losses in weight en route are substantial. Meat is consumed fresh, since there are no modern slaughter houses and no freezing units where carcasses can be stored and marketed as they are needed.

Extension approaches.—Government warehouses and grain shelters are being constructed in towns and cities, but the question of increasing storage and marketing facilities has not been fully explored. Extension workers should work closely with the Government in inquiring into the situation and with the farmers in disseminating any resulting information.

Education in improved farming practices and family living

Present situation.—A large-scale drive in education has increased the number of students in primary schools from 50,000 in 1927 to 1,400,000 today (1949), and the most modern structure in any village is the schoolhouse. Several technical schools for agriculture have recently been opened, where agricultural education and board are given free for 3 years to boys and girls between the ages of 12 and 15. In two agricultural mechanical schools boys are taught to repair and use agricultural machinery and implements. The Department of Agriculture has four agricultural schools above junior-high-school level. After 3 years there, the boys are sent to teach in several parts of the country. An agricultural college attached to the university and composed of three faculties—agriculture, forestry, and veterinary—is a training center after high school for working in agricultural research, the schools, or the ils (states).

Stations for plant breeding, plant pathology and entomology, silkworm production, animal breeding, and nurseries are provided as research and demonstration centers.

To have food, rural people work all day in the fields, which leaves them little time and energy for the vegetable garden, homemaking, and scientific care of children. The family diet is mainly bread grains and vegetables, since fats are not abundant and are consumed with strict economy.

Each of Turkey's 63 ils has an extension system with a director and each of the 540 ilces (counties) has an agricultural teacher. This system should be expanded if agricultural knowledge is to be made available to farmers for improved farm life.

Extension approaches.—The suggestion has been made that in the last 2 years of primary school, girls specialize in homemaking and agricultural skills. Nursery schools held during the seasons when mothers are in the fields would give girls experience in caring for small children.

Only recently have farm youth had opportunity to attend schools, and extension's duty is to encourage and cooperate in all educational efforts. Education in Turkey is greatly needed.

Obstacles

The greatest obstacles in the adaptation of an agricultural extension program suitable to conditions in Turkey are:

> Need for properly trained agricultural workers who can understand the farmer and evaluate the agricultural practices of the country. Most of the agricultural-school graduates have urban backgrounds and but slight understanding of rural problems.
>
> Lack of transportation and living facilities for extension workers in rural areas.
>
> Centralization of agricultural services and lack of freedom of action on a regional basis, which hinder local initiative.
>
> Limited facilities for both the farmer and the extension worker to carry out improvements that at times demand equipment, credit, and the like.
>
> The conservative attitude on the part of farmers, who resent change unless its desirability is graphically proved to them (perhaps the largest obstacle in any new program).

Concern for change

Since the birth of the Republic, farmers have been concerned more than formerly for some kind of change. Several factors have led to this awakening, such as establishment of community centers where discussions and lectures, radio, and other similar mediums have been used. The young men who serve in the army are stationed in the cities, where they observe ideas and ways of life that they have never experienced in the rural homes. Also, the army conducts agricultural lectures in addition to military training. New market demands for better graded products commanding better prices have brought a desire among farmers for better cultivation methods and marketing facilities. All these new forces are bringing about increased concern for change. As the agricultural products of the farmers come increasingly into direct competition in international markets with similar products from other countries, concern for improvement of agricultural practices and organization into cooperatives becomes more apparent.

For centuries the Turkish peasant supplied the food and fought the wars of the sultans. He paid the highest taxes and was neglected as a member of Turkish society. Although the new Republic is trying to change this order, the farmer is slow in accepting and following any change that is strange to his culture. Under such circumstances trained workers with rural backgrounds are important in evaluating the agricultural practices and values of life of the rural people. Despite their backwardness, farmers feel that unless they are a part of the program it will fail. Rural-improvement programs should be planned by the farmers under proper guidance from extension workers. Regardless of the degree of illiteracy of the Turkish farmer and his primitive methods of growing crops, he should be given due recognition in the planning and execution of these programs.

When agricultural programs well adapted to the area and to the ability of local people to absorb are planned, much can be accomplished in rural training in Turkey.

COMMITTEE MEMBERS: Clayton E. Whipple, Office of Foreign Agricultural Relations, United States Department of Agriculture, Chairman; Fuat Halis Eren, Department of Agriculture, Ankara, Turkey; Gertrude Humphreys, West Virginia University, Morgantown; Bruce M. Lansdale, Rochester, N. Y.; Walter E. Packard, Economic Cooperation Administration, Athens, Greece; Frederick G. Renner, Soil Conservation Service, United States Department of Agriculture; F. L. W. Richardson, Jr., Yale University, New Haven, Conn.; Irwin T. Sanders, University of Kentucky, Lexington; C. S. Stephanides, Office of Foreign Agricultural Relations, United States Department of Agriculture; Edna N. White, Dryden, Mich.; Ralph H. Woods, Murray State College, Murray, Ky.

Southwestern Europe

Italy, Spain, and Portugal

No report is included for Italy, Spain, and Portugal, even though a committee was organized for this area. The report on Italy is not included because a publication of the Organization for European Economic Cooperation (*6*) provides a sufficiently comprehensive analysis of extension work in these countries. The committee felt that as there had been little or no change in extension in Spain and Portugal since the 1944 conference (*9*), another report at the time of the conference would be inappropriate.

COMMITTEE MEMBERS: J. Clyde Marquis, Orange, Va., Chairman; Clemente B. Colonna, Italian Technical Delegation; Miguel de Echegaray, Embassy of

Spain; Mena Hogan, Extension Service, United States Department of Agriculture; Lena Passerini, Food and Agriculture Organization of the United Nations; Charles E. Potter, Extension Service, United States Department of Agriculture; P. M. Rogers, Italian Technical Delegation; Elmer A. Startch, College of Agriculture, University of Nebraska, Lincoln.

Central and Northwestern Europe

Austria, Belgium, Denmark, France, Germany, Great Britain, Ireland, the Netherlands, Norway, Sweden, and Switzerland

The conference Committee, which was organized to report on Central and Northwestern Europe, made a valuable contribution to the conference. However, only the findings relating to Germany are included in this final report.

All the countries in this area were included in a Report on Agricultural Advisory Services in European Countries (*6*), made by a working party of experts and published by the Organization for European Economic Cooperation. Persons who wish specific information about extension work for these countries, other than Germany, should consult the comprehensive findings in this report, recently off the press.

Germany

Up to the end of 1944 agriculture in western Germany was, except in the actual fighting zones, in relatively good shape. However, there was a slow decline in soil fertility because of the decline in the quantity and quality of stable manure and the insufficient supply of commercial fertilizers, with decreasing amounts available beginning in 1938 and reaching 15 percent of requirements by 1945. The replacement of farm implements could not be made as in normal times, although during the Second World War German exports of farm machinery reached an all-time high, and in Germany itself the number of tractors was increased from 50,000 to 160,000. This decline of soil fertility was not permanent and is rapidly being rebuilt.

In Germany serious disintegration of agriculture did not begin until the spring of 1945. This disintegration was the result of various factors. Damage to farms caused by the fighting itself varied greatly, but on the whole was much less in the west than in the east. Nevertheless, in the British zone alone more than 28,000 farms were destroyed, but probably not more than three-hundredths of 1 percent of the total number in the country were seriously affected.

After the fighting had passed, normal transportation by road and rail stopped almost completely and the supply of commercial fertilizers, agricultural implements, and spare parts stopped. The price structure and the credit system collapsed. The rationing system broke down. The position of the local and country administrators became extraordinarily difficult. Obviously, most of them were party members, and according to occupation policy to remove National Socialists from positions of importance and influence, new local as well as state administrators had to be found and given support.

Food production inadequate

In 1946 agricultural production dropped to two-thirds of the prewar average. Population in the three western zones increased nearly 30 percent—from almost 37 million to about 48 million—because of the influx of refugees and expellees. In addition, the agricultural area of eastern Germany, which produced 25 percent of Germany's food, was under Russian control. Relatively little of the production from this area was available to the West, as usual, and soon was completely shut off.

The agricultural area of western Germany amounts to less than 36 million acres; that is, there are now 13 persons to 10 acres as compared with 11 persons before the war. In peacetime, German agriculture produced on 10 acres enough food for 8 persons. With the reduction in yield mentioned, only 5 people could be adequately fed from indigenous production. In other words, without imports, 13 people had to live on the normal rations for 5 people. In reality, the food situation was still worse for the majority of the urban population because the collapse of the currency, breakdown of the ration system, and resistance to collection by farmers caused the black market to become a serious factor and prevented an even distribution of the sparse provisions.

Domestic production was supplemented by imports from the United States and, to some extent, from Great Britain, and though no mass starvation took place, malnutrition was in evidence in the larger industrial areas. No serious situation was found in the rural areas however. Two years after the end of the war some signs of improvement were everywhere in evidence, partly because of increased production, but mostly because of nearly three-quarters of a billion dollars' worth of food imports.

If western German agriculture again reaches only prewar efficiency, it will still be adequate for only 29 million people eating at prewar levels and leave 17 to 22 million, or nearly 40 percent, to rely on imports.

The advisory work has, as in most European countries, a long tradition that goes back to the beginning of the nineteenth century, and in some sections of the country even farther back.

Furthermore, the old system of land allotment and the inheritance custom in considerable parts of southwestern Germany have created an extreme fragmentation of farm land into small narrow strips that are an obstacle to modern methods of agriculture. Therefore the speeding up of land consolidation is essential. After this consolidation, a limited mechanization on a cooperative basis, even for small farms, will be possible. A reduction of unnaturally high prices for farm equipment and high interest rates must be effected before large-scale mechanization can take place.

The collapse of the whole German administration in 1945 included also the agricultural education and extension service. One of the first policies of the occupation, however, was to reestablish this service and make it more effective and democratic.

The chambers of agriculture, agricultural associations, societies, and cooperatives were taken over by the Reichsnaehrstand in 1933. The Reichsnaehrstand is now dissolved and its duties have been taken over in parts of western Germany partly by the newly established chambers of agriculture, which do not, however, have the same legal status as they possessed prior to 1933, when they were semiofficial organizations. This transfer of duties from the Reichsnaehrstand to other organizations was accomplished in a different manner in each area of western Germany and has not yet been entirely completed. Many difficulties have resulted from each transfer. Likewise extension must be organized differently in each area. This is particularly true of the advisory service given by specialists. The extent and kind of participation that should be undertaken by government and by private organizations are involved in this service.

Extension service lacks coordination

Generally speaking, the present method of operation of the agricultural extension service has several shortcomings: (1) Lack of functional relationship between research institutes and county workers; (2) lack of systematic organization of the service, especially the coordination of teaching and extension at the Laender (state) level; (3) failure of the existing advisory services to reach down to the level of the village and the individual farmer; (4) inadequate planning by local farmers; (5) tradition individual "advising" of a few rather than helping everyone. The agricultural schools in the counties particularly, are burdened with too many other tasks. The whole staff of the schools was and still is in many respects the agent of the ministries of agriculture and the chambers of agriculture. During the rationing years, these men were more or less involved with police power in determining and enforcing agricultural delivery quotas. This has done considerable harm to the prestige of the schools and their staffs in the eyes of many peasants. One of the most important tasks of the extension service is to win back the complete confidence of the peasants. Furthermore, the staff is burdened with the detail work necessary to carry out practical measures such as plant protection and certification of seed and livestock. This situation makes it difficult to proceed with a systematic intensification of the agricultural extension service. This is true in all the west German Laender.

But on the whole, most agricultural leaders are of the opinion that the school of agriculture and the advisory service should continue to be under the same administration, with one chief for both at the county level.

Most of the agricultural schools already have courses for girls. The extension work in home economics is done by the teachers of these girls' courses. The need for intensification of this advisory work for farm women is felt strongly, and efforts in this direction are being made by all existing agencies. In particular, the teaching of home economics at the university level is being introduced. Up to now the teaching has been done at special schools for home economics. Research in home economics is lacking.

Farm-youth activities have not heretofore been given sufficient attention. Now farm-youth organizations are being built up and it remains to be seen whether these, with the encouragement of the advisory service, will develop similarly to the 4–H Clubs in the United States of America. But, after the experience with the Nazi youth organization, care must be taken not to permit these new organizations to become elements that will disturb family unity, or an instrument for building another misdirected machine.

Side by side with efforts to improve the extension service within the present frame, is considerable research work on how best to streamline the organization and intensify the activities of the service. These efforts have been strongly supported by the United States Military Government.

Such research is at present being carried out in a few selected counties where intensive advisory work is done, particularly in farm economics. In these counties as many peasant farms as possible are changed into demonstration farms. Besides this work, advisory work in home economics is done and rural-youth activities are also guided and supported. In cooperation with the chambers of agriculture, special courses for personnel engaged in extension work are organized.

These efforts to develop methods for a fundamental reorganization of the extension service is supported much more by leading agricultural scientists than by the administration or the chambers of agriculture.

Three pillars of German agriculture

A spokesman for the chambers of agriculture has pointed out that the self-administration of professional groups by means of semiofficial so-called corporations is a typical characteristic of Germany's economic administration, and worked well until 1933. He called attention to the fact that there are three pillars on which the structure of German agriculture rests: (1) For problems of agricultural economic policy, the German Farmers' Union (Deutscher Bauernverband); (2) for problems concerning marketing, credit, and the like, the Association of Agricultural Cooperatives (Arbeitsgemeinschaft Laendlicher Genossenschaften); and (3) for problems of education and extension, the Association of the Chambers of Agriculture (Arbeitsgemeinschaft der Landwirtschaft). Besides these, there are certain special organizations such as associations of animal breeders and plant breeders. The efforts to centralize all agencies under one top organization would, in the opinion of the chambers of agriculture, create nothing else but a new Reichsnaehrstand. Military government has opposed such steps.

In opposition of this attitude, there are many people who believe that food production in Germany is now so important that national organization is needed and that the coordination of the efforts of different agencies has in principle nothing to do with the totalitarian form of government. Important only is the way in which this is done. This attitude is strongly supported by most agricultural scientists. The outcome of this struggle of ideas will probably have a great influence on future organization of the agricultural extension service in Germany.

The extension service situation in the different zones and Laender is as follows:

In the Soviet zone, each of the five Laender is responsible for carrying out and financing its own agricultural extension service. In April 1948 the so-called Association for Mutual Peasant Help (Vereinigung fuer Gegenseitige Bauernhilfe) took over the practical work of the advisory service. To coordinate the efforts of the five different Laender in the field of agricultural extension, a special council was set up consisting of nine members selected from the administration, the Association for Mutual Peasant Help, and the German Agricultural Society.

The German Agricultural Society (Deutsche Landwirtschaftsgesellschaft, the D. L. G.), founded in 1855, was the outstanding German agricultural society and had had great influence on the progress of German agriculture as a whole. This society, which had been taken over by the Reichsnaehrstand, was reestablished after the war, but separately for eastern and western Germany.

In the individual counties of the Soviet zone the work of the agricultural advisory service is carried on by the Association for Mutual Peasant Help and directed by an Agricultural Advisory Board, which is in charge of the agricultural schools, the district advisers and the special advisers, and also the village economy promoters (Dorfwirtschaeftspfleger).

Farmstead advisers

Once a month a council of active peasants and representatives of administrative agencies interested in agriculture meet with the advisory board. The connection between the agricultural schools and the advisory service still exists, but the schools themselves now have very little time for actual advisory work, since teaching at the schools now extends over the whole year, whereas it was formerly limited to the winter months.

The most recent development is the pronounced tendency in the advisory service to propagate the advantages of a planned economy. This is done with the help of "honorary farmstead advisers" (ehrenamtliche Hofberater). Nearly 13,000 larger farms have been distributed among 200,000 settlers. And finally, special advisory service is given to outstanding farmers to create a Nacheiferungsdynamik, literally translated, "emulation dynamic."

In the French zone a working group (Arbeitsgemeinschaft) for the agricultural extension service has been formed that consists of representatives of the administration, the Association of Agricultural Cooperatives, the Chamber of Agriculture, and agricultural scientists. Corresponding working groups have been set up in each county.

In the American and British zones the organization of the agricultural extension service varies in each of the six Laender.

Starting in the north, in Schleswig-Holstein, where middle and large peasant farms predominate, many private advisory rings have been founded during the past few years. Such rings consist of 30 to 40 farms. Like the Danish farmers, Schleswig-Holstein farmers have been for the most part able to select their own advisers. Some have been able to carry on without government subsidies, but others from the very beginning have had to ask for some financial assistance. The results of ring operations depend to a great extent on the quality of the man in charge of the ring. But generally speaking, they are very encouraging. After the currency reform most of the rings needed financial assistance.

This type of experimental or advisory ring organized by progressive farmers themselves had already had, between the two World Wars, a favorable influence on German agriculture. They disappeared after the creation of the Reichsnaehrstand.

Besides these private advisory rings, Schleswig-Holstein also has an advisory service for agricultural schools. Some of the advisory rings are directly connected with the schools, and these are usually engaged in soil and plant experiments. The purely private rings, on the other hand, stress economics.

A similar situation exists in Niedersachsen, but the private rings are not so numerous there as in Schleswig-Holstein. Here the agricultural extension service is also attached to the agricultural schools. The advisory work is for the most part directed to groups of farmers rather than to individual farmers.

Niederrhein-Westfalen has a much closer knit system of agricultural schools spread over the country and these are assisted by active agricultural societies. The agricultural schools carry out the extension-type programs. In 1948 they came under the direct control of the administration. Each school is in charge of a ring of progressive farmers. A council for agricultural research, education, and extension organizes training courses for extension personnel and cooperates with the different branches of research, general education, and extension. The council also evaluates the results gathered by the experiment rings.

In Hessen, where small holdings predominate, practically no private advisory rings have been established. But the demand for more advisory service exists among the peasants. To meet this demand more advisory personnel for agricultural schools was made available by the Chamber of Agriculture, which, in Hessen, is in charge of the agricultural schools and the extension service. Each adviser now has 10 to 15 villages to serve. He tries to establish in each village at least one demonstration farm with which he can illustrate the practical results of his recommendations. The work done by these advisers is partly excellent, partly not, mostly depending on the ability of the adviser himself.

An advisory council, the Agricultural Advisory Service of Hessen, has been founded and is attached to the agricultural college of Hessen in Giessen. It is financially supported by the United States Military Government.

Relation of extension service to schools of agriculture

In Württemberg-Baden agricultural schools and extension service are directly under the administration, therefore the chamber of agriculture does not act as a go-between. The extension service program is carried out by the agricultural schools through group service rather than through individual advice. Some of the few larger farms have formed a loose type of advisory ring.

Last September an "Agricultural Central Service of Enlightenment and Progress in Württemberg-Baden" was founded in Stuttgart. Its goal is to coordinate the sometimes conflicting efforts of different agencies to promote agriculture. The Central Service has set up special advisory committees in some counties. The peasants themselves, the women in particular, are encouraged to make proposals for the betterment of the extension service.

In Bavaria, the extension service is also under direct control of the administration and works here in particularly close connection with the agricultural societies and cooperatives. Whereas in other Laender of western Germany nearly every county has its agricultural school. In Bavaria nearly two-fifths of the counties are without such a school. On the other hand, Bavaria is starting to use the staff of the 1,500 agricultural continuation classes to assist in the extension service. There is a possibility that such staffs will be used similarly in the other Laender, but on the whole, plans are still in the discussion stage. In addition to financial difficulties, the lack of suitable personnel able to teach continuation classes and carry out extension work successfully at the same time is the limiting factor in plans for development.

The continuation schools were organized in Germany after the First World War. Attendance at these schools, usually 1 day a week, is compulsory for 2 to 3 years after secondary school work is completed. In rural districts these schools teach some fundamentals of agriculture in addition to general subjects. Possibly these agricultural continuation schools will play a considerable role in extension work in the future. As a step in coordinating research and extension which would include developing local planning, decentralizing some aspects of administration, and introducing new methods of extension teaching, seven "demonstration" kriese are being established through the cooperative effort of the farm organizations, the ministries, and the Military Government.

An important step in the policy for agricultural improvement as a whole was taken in the American Zone in April 1947 with the establishment of a special Laenderrat advisory committee composed of German agricultural scientists, educators, and administrators. The general function of this committee is to analyze the personal and physical facilities and activities of the various research, educational, extension, and related institutions and services to determine their adequacy in the light of present and future needs, and to recommend corrections wherever they were deemed necessary.

The committee proposes legislation in agricultural research and education. It recommends emergency measures such as special training courses and improvement of agricultural continuation schools. It encourages the analysis and dissemination of valuable unpublished research results, promotes exchange of agricultural literature among the different Laender and zones, as well as with foreign countries. The committee also promotes the exchange of scientists, administrators, and agricultural teachers and advisers with foreign countries.

The committee studies agricultural research and educational and extension systems in other zones and in foreign countries to obtain new ideas having practical application. Finally, it maintains liaison with all the ministries concerned and assists other established agricultural research and educational societies, organizations, and councils in order to promote cooperation and avoid duplication of activities. With the establishment of a western German state, this committee will be reorganized at Frankfurt and will work with the new agricultural administration.

Similar committees for the promotion of agriculture have been founded or are in the state of formation in each of the Laender of western Germany. In these committees the practical farmer himself—including the farm women and farm youth—will have the strongest voice. This will insure the cooperation of the farmers in the formation of the extension program.

The Central Committee for Western Germany would be the agency through which the contacts to promote international cooperation of extension should be established.

COMMITTEE MEMBERS: P. Lamartine Yates, Food and Agriculture Organization of the United Nations, Chairman; E. W. Aiton, Extension Service, United States Department of Agriculture; Marion Butters, Rutgers University, New Brunswick, N. J.; Gladys Gallup, Extension Service, United States Department of Agriculture; A. A. Garthoff, Production and Marketing Administration, United States Department of Agriculture; Francine Gilles, Brussels, Belgium; Gertrude Gronbeck, Office of Foreign Agricultural Relations, United States Department of Agriculture; Florence L. Hall, Extension Service, United States Department of Agriculture; Dr. Haushofer, Munich University, Bavaria, Germany; Maurine Hearn, Texas A. & M. College, College Station; Albert Hoefer, Cornell University, Ithaca, N. Y.; Heinz Krause, Washington, D. C.; A. B. Lewis, Food and Agriculture Organization; Jack Lynn, American Farm Bureau Federation, Washington, D. C.; Monroe McCown, Office of Foreign Agricultural Relations, United States Department of Agriculture; Werner P. Meyer, Office of Experiment Stations, United States Department of Agriculture; George J. Misse, French Embassy; Raymond Ricaud, French Embassy; J. G. Richard, Louisiana State University, Baton Rouge; Jean Ritchie, Food and Agriculture Organization; R. Savary, International Federation of Agricultural Producers, Washington, D. C.; I. O. Schaub, University of North Carolina, Raleigh; M. W. Taylor, British Embassy; Wilbur H. Thies, University of Massachusetts, Amherst; C. W. C. van Beekom, Netherlands Embassy; W. K. Williams, Forest Service, United States Department of Agriculture.

Canada, Australia, and New Zealand

Out of their exchange of opinions, members of the Committee on Canada, Australia, and New Zealand, found various problems existing in each of the areas, despite the fact that each has well-established, effective, and, relatively speaking, well-rounded governmental organizations and many other nongovernmental organizations performing extension types of services.

The two problems that immediately came to the fore and persisted in occupying a good deal of the time of the Committee were:

1. The attention being given in these areas to extension service administration to get better coverage and to obtain the needed numbers of properly trained workers for the various types of extension that have already been undertaken in each country.
2. The importance of home and family life and the development of rural community life.

Briefly, the need for strengthening and broadening the functions of the extension organization in each of the three countries of Canada, Australia, and New Zealand, is receiving increased attention. There is a demand for additional personnel and better trained workers. Boys' and girls' club work has greatly expanded. Much progress has been made in the development of programs showing concern for the family and the community side of the problem.

The discussion brought out the fact, however, that development of staffs and services dealing with the human aspects of extension work has not been commensurate with extension development in the field of technical and scientific aids to solution of agricultural production problems. Several reasons were given for this lag in the field of human welfare, including the observable tangible results obtained from increasing farm income as a result of improved seed or livestock. The most important reason, however, was believed to be lack of appreciation among farm people in some areas of the valuable results to be obtained from the broad scope of extension work in its relation to home economics or the general welfare of the family group and community.

The need for strengthening and broadening the extension organization in each of the three countries of Canada, Australia, and New Zealand, is receiving increased attention.

In Canada, where research in the agricultural sciences is well advanced, the Agricultural Institute of Canada and some of the provincial organizations express the feeling that still greater use could be made by farmers of research information. The institute, for example, at a meeting held in June 1948, proposed certain steps that it was believed would improve the organization of extension services and produce even better trained extension workers in years to come.

In New Zealand the extension service has lately been expanded to include a rural-development section which covers problems of land utilization, farm management, and rural sociology, and gives some attention to developments in the farm home.

In Australia, the Institute of Agricultural Science, composed of practically all of the outstanding professional agriculturists in that country, is working with other organizations and government authorities to obtain expansion and improvement in the advisory extension services.

Canada

The field of agricultural extension in Canada and the problems relating thereto are not unlike those of other countries in which there is a combination of democracy and advanced agricultural developments. The fundamental problems were well summarized in 1942 by the extension group of the Canadian Society of Technical Agriculturists (now The Agricultural Institute of Canada). The essence of their report was as follows:

> The fundamental problems of extension work are: How to interest farmers in the work, gain their confidence, direct their organized efforts, train leaders, reach the home as well as the farm, interest young people in rural life and in the problems of the farm and the home, advance community development and cooperation, and improve the farm income. These problems should be approached with the ultimate aim of a richer, fuller, better developed, and better organized rural life.

The appropriate government officials, leaders in agricultural education, and extension workers in Canada are aware of the requirements for an effective and beneficial extension service. The extension problems that exist in Canada are not more pressing, but are more apparent than in some countries because of the wide discussion of the needs by a progressive agricultural community, which has to work out possible procedures under a federal system of government.

In Canada, as in the United States, governing bodies have specified fields of responsibility. More than 80 years have passed since the fields of duty were allocated. Canadian leaders are taking stock of the current situation to see how well the division of responsibility fits the present-day picture.

Extension organization needs

Canadian extension work operates under a division of authority between the Dominion and provincial governments, much as outlined by the British North America Act of 1867. The provinces still are primarily responsible for all education, including extension, and, as a result, the federal Department of Agriculture, which is by far the largest agricultural research organization, theoretically is not permitted either to make these results available in popular form or to take steps to insure their utilization. In addition to a broad and valuable research program of great interest to farmers, the Department of Agriculture also conducts a number of extension activities. However, the Department does assist the provinces financially in a coordinated extension program, although certain grants are made for specific projects such as junior clubs and fairs.

The opinion seems to be widely expressed in Canada that there is a definite need (1) for coordinated Dominion-provincial extension arrangement to bridge the gap between research and its utilization by the farmer, (2) for additional numbers of well-trained extension workers, and (3) for expansion of home economics extension work.

Gap between research and farm practices

Results of Canadian agricultural research are not being utilized satisfactorily throughout Canada. This was the opinion expressed unamimously by the branches of the Agricultural Institute of Canada in a questionnaire submitted in 1946 by the policy committee, and repeated in replies to a recent questionnaire sent to institute members interested in extension. This is further supported by the 1947 report of the Manitoba Royal Commission on Adult Education. The findings revealed that one of the most conspicuous gaps in adult education in Manitoba was the one existing between agricultural research material and the information in the hands of the practicing farmer. This situation is not peculiar to one province only.

One of the primary problems is the lack of published data. The delays in the issuance of popular publications are not the fault of the research worker. This type of work should be done in collaboration with a qualified writer who has training in scientific agriculture. The responsibility for publishing popular statements should rest primarily with the institution that conducted the research.

Technical bulletins, although not widely usable, are basic. The present bulletins and pamphlets appear to be technically correct and to contain a fund of useful information, but most of them lack even the primary elements of showmanship. They are too academic, too long, and frequently are too general. There is, therefore, a great need for the more popular type.

At present, many of the most popular and often the most useful bulletins are published by commercial concerns. This should be encouraged but should not take the place of government or university publications.

Growing awareness of home needs

In Canada considerable progress has been made in recent years in developing home demonstration work in extension programs. This has been done at both the federal and provincial level, as well as by nongovernmental organizations, notably the Women's Institutes and the Red Cross.

Surveys carried out by the federal Departments of National Health and Welfare and of Agriculture are helping to define food and nutrition problems in various rural districts throughout the country. Part of the work of nutritionists attached to the provincial departments of health is concerned with planning programs that will help to meet these problems. Much of their work is done in association with the provincial departments of agriculture and education.

Aside from actual home demonstration programs, a sizable rural women's audience is reached through the media of the press and the radio, for which articles and programs are designed by the consumer section of the Dominion Department of Agriculture. Of interest is the large-scale use of films for rural audiences made possible by the development during the Second World War of the Canadian National Film Board's rural circuits. The increase in rural film use is indicated by the fact that the showings to rural audiences in 1948 were 54 percent greater than in 1947. In addition to its own productions, many of which are sponsored by other government departments, the National Film Board distributes films made by private firms, if these are approved by agricultural experts and home economists, as well as films from other countries if they are applicable to Canada.

Youth training schools have assumed an important place in extension work. In many provinces, the universities have developed extension departments with diverse facilities, such as traveling libraries, short courses for young farmers, agricultural publications, and extension lectures of all kinds. One of the functions of the Canadian Association for Adult Education, founded in 1935, is to assist in the National Farm Radio Forum.

Emphasis on the home economics phases of the Women's Institutes program is growing. In Ontario, for example, through the cooperative program in home economics, a technical staff of the Ontario Department of Agriculture works with women's institutes to improve home practices in clothing construction, selection, and care; household management; housing; or family-life education, as well as in nutrition and health education.

Local leader training schools are arranged for leaders responsible for conducting demonstrations or classes to benefit their communities. The department of home economics provides instructors for these training schools.

Health-education services for rural areas have been strengthened considerably since the end of the Second World War. In some provinces traveling clinics have been established, and air ambulances serve isolated districts. The dental health division in some of the provincial public health departments is playing an increasingly important part in rural dental preventive programs. The Dominion Department of Indian Affairs is concerned with the health and welfare of the native population.

Recommendations

Recommendations under consideration among groups interested in extension work in Canada are that—

> An evaluation of extension methods be conducted by the federal Government in cooperation with the provinces.
>
> The federal Government expand its extension services so that appropriate research results may be available in suitable form for timely distribution.
>
> A national committee on extension be established under the National Advisory Committee on Agricultural Services.
>
> The federal Government provide financial assistance to the provinces and the universities as an aid to developing adequate extension programs cooperatively.

Canadian authorities and agricultural extension workers generally realize that one of the main needs of Canada is the improved training of extension workers. There is a feeling that not only should there be more trained extension workers, but that they should have a broader training than previously with respect to economic matters, marketing conditions abroad, and other questions of public interest to Canadian farmers. The Canadian Extension Association, which is now seeking recognition from Dominion and provincial authorities, recognizes this factor and already is making suggestions for revision of courses in agricultural colleges and universities.

A resolution on extension training was passed at the Agricultural Institute of Canada meeting on extension in June 1948. It called for establishment of suitable postgraduate courses at one or more selected colleges or universities, at the earliest possible date, for training extension workers.

Australia

In Australia various types of services are carried out through a number of organizations.

Organizations

The first such organization, which is comparatively recent in its inception, is the rural-area school. The majority of primary schools in Australia are administered by the states through state education departments.

The second type of institution is the state-government-administered agricultural college, of which each state has one or more. They are well run and strike a happy medium between the primary schooling given by rural-area schools and the university training.

The third medium, and the greatest in extent and importance at present, is the state agriculture department. These departments function through their experimental farms and extension officers. The way in which they are organized also varies from state to state.

Some of the experimental farms may be devoted almost exclusively to one type of horticulture or, in a separate area, to tobacco problems. Others practice diversification and thus provide a model for the farmers in the district.

The extension officers themselves function in much the same way. Many of them are specialists in one crop, or, at best, in one type of agriculture. On the other hand, one or two states have extension bureaus with area advisers, who are usually familiar with developments in a variety of agricultural and animal-husbandry problems. The state extension officers are undoubtedly the most active persons in the dissemination of technical information. In recent years, many farmers have come to look upon them as friends and to consult them not only about technical details but about their neighbors' private problems, and regard these extension workers as personal confidants. The demand for discreet and capable persons who can cope with situations met under these circumstances and retain the confidence of all their growers far exceeds the supply.

The fourth group, which contains only a small number of extension organizations in the usual sense, is composed of high-level research bodies such as the Commonwealth Scientific and Industrial Research Organization. Because of Australia's written Constitution, this organization has limited powers. In the main, it confines its activities to fundamental scientific research whose findings are not only unacceptable as such to the farmer but of no value to him unless they are interpreted in popular language and placed before him in workable form. The experimental field stations connected with this organization are scattered throughout the Commonwealth, but do not, of course, provide in themselves an ideal medium for the dissemination of knowledge. More frequently, their work is carried to the farmer after it is modified for local application by passage through a state department extension officer's hands.

A fifth medium through which information can be quickly disseminated to growers in limited areas, and one that has had outstanding success over the last decade, is the system of organizing grower competitions. The state extension officers usually instill a competitive spirit in the farmers, giving the same advice initially to each and devoting as much time as possible to those who enter into the competition with the greatest enthusiasm. The principle of grower participation to some extent in research, and to a major extent in extension and demonstration, is perhaps the most successful now being applied. There is no doubt whatever that a grower who is looked upon as a leader by his neighbors can do more to instill confidence in them in 1 year than an independent extension officer can do in several years. The private-enterprise industries most active in the extension field at present are canners, quick-freezers, fertilizer distributors, and machinery manufacturers. There is an increasing tendency for them to employ trained agriculturists from the state colleges or from the universities.

Cooperatives and growers' associations are also very important because they include the principle of grower participation in research and extension. The best examples of cooperative industries are the dried-fruit and the dairy-produce industries. A number of these industries in Australia are employing a trained staff at present. Their progressive policy is making cooperative industries popular, not only with their participating growers but with the research bodies that want to see their ideas put into practice.

The Department of Commerce of the Commonwealth Government undoubtedly has an indirect effect on grower practices. This department is charged with the responsibility of supervising the grading of foods for export. Department inspectors are stationed in manufacturing and packing plants and often are able to advise the plant management and the growers delivering their produce to the plant not only as to how products can be improved, but to whom they should refer for technical advice on how to achieve the required results. These inspectors are particularly active in the dried-fruit, dairy-product, and meat industries.

The various banking authorities in Australia, that is, the Commonwealth Bank and the state banks, including the Rural Bank of New South Wales and privately owned banking enterprises, also carry out a small amount of advisory work and conduct agricultural surveys. These banks are finding that a technical staff is necessary to conduct agricultural surveys for use in guiding their own practices. Thus, they benefit themselves and the growers to whom they are lending money by giving information as well as receiving it. Once again their difficulty is shortage of experienced staff.

Publications, radio, and films

Articles written for consumption by scientists are interpreted not only by extension officers and by the publications of state agriculture departments, but also by pamphlets and advertising leaflets designed specifically for the grower. Some of the fertilizer companies produce such booklets. Several of the leading daily newspapers prepare a weekly rural edition, or even publish separately a weekly periodical designed specifically for the farmer. These publications fill a necessary role and are widely read throughout the country. Radio publicity is another successful means of reaching the farmers' ears direct. The Australian Broadcasting Commission gives a 1-hour program each Sunday morning to which an enormous number of farmers listen. The broadcast information is usually edited by highly competent technical authorities experienced in interpretation. The number of technical films on agricultural subjects prepared in Australia is, unfortunately, small, but is increasing.

Extension and improvement of home and community life

Isolation of farms often makes it difficult to reach rural families with an educational program. Consequently, such programs relating to rural home and community life are rather inadequate for parts of Australia.

In Australia, New South Wales has led the other states in employment of trained women as extension officers. The Country Women's Association, though not primarily an extension organization, has developed into a valuable medium for formulation of public opinion. Libraries are but slightly developed in most country centers. The university extension boards arrange certain lectures and study groups, but participation in most districts is limited.

The postwar activities of the Red Cross society are an example of the appreciation of opportunities for further rural education in Australia.

A nation-wide nutrition survey, results of which were published in 1945, revealed the existence of malnutrition among rural groups. Consequently, the nutrition division of the Australian Red Cross offered its services to the federal Government. Nutritionists and social-welfare workers cooperated with state educators and health departments in the initiation of schemes for the improvement of family welfare.

The junior farmers' movement is rapidly expanding and will provide a means for reaching the farming community not available previously. During the past decade, the young farmers' club movement has made considerable progress in the various states. It operates under the education departments or is organized by special committees.

The general aim of the movement is to encourage boys and girls to take a more intelligent interest in farm projects. To that end the members are encouraged to look after animals and to learn how to judge stock for quality. In some districts, studies of pastures or crops or of products are undertaken. Generally, the degree of enthusiasm of the group is proportionate to the interest displayed in it by one or another of the local teachers. Frequently, this work has to be carried out by the teacher in his spare time.

A problem of first importance is the lack of adequately trained extension personnel. Shortages of trained staffs, for obviously needed research or to act as less obviously needed extension workers, have led to graduates' being absorbed in advance of release from university courses. Usually they start straight in on a specific technical problem without training in methodology, sociology, or other courses that would strengthen the administrative side of extension work. Two things are responsible for the lack of courses in training in agricultural sociology or in home economics: (a) Small population and small number of agricultural undergraduates interested in such work; (b) inadequate recognition of this as a problem until recently.

Training of additional personnel can be expected to parallel development of extension methods. This seems to be a matter not only of making available facilities for training and the necessary funds, both of which are needed, but of attracting able people with good personalities to this type of work. The universities have been successful in producing competent research workers and, because of preferential conditions of employment, the best men frequently have been attracted to research posts. This is not to say that there are not good extension officers in the country, but further coordination between the administrations of the several instrumentalities concerned may assist in the building of stronger extension staffs. This is complicated, as previously mentioned, by the constitutional relation of the States to the Commonwealth Government. The decentralization of research and extension bodies has also tended to make it difficult to obtain adequate funds.

The universal conservatism of farmers must also be taken into account. They are all well enough educated to be literate, vocal, and have some degree of skepticism regarding new programs. Australian farmers, however, generally realize that the era of soil exploitation is passing, if it has not already passed. They are coming to a realization that adoption of research and experimental results is essential. Several competent authorities have publicized this need and suggested remedial measures.

The Australian Institute of Agricultural Science is concerned about extension. The following resolutions were adopted unanimously at a recent meeting of a state branch of the Institute:

> That agricultural extension work in Australia is far from satisfactory and lags seriously behind the standards achieved in many overseas countries. [and]
>
> That immediate action should be taken by the Institute to survey the position in all states and then to formulate a national plan for improved extension services to be administered by the states but financed jointly by the state and Commonwealth Governments.

New Zealand

The Extension Division was formed in August 1948 as an amalgamation of the Fields Division and the Rural Development Division in the New Zealand Department of Agriculture. This amalgamation has widened the sphere of extension activities of local instructors in agriculture. In addition to dealing with farm management and the more direct problems of pastures and crops, the Extension Division now engages in the study of farm economics, farm engineering, and farm forestry. Some attention is also paid to developments in the farm home, an important department of most farming enterprises.

The division is controlled by a director, an assistant director, and several specialist officers at headquarters. Contact is made with field officers through field superintendents at Auckland, Palmerston North (Wellington for the rural sociologist), Christchurch, and Dunedin. Farm-machinery officers, a rural sociologist (female graduate in home science), and rural economists are located at each of these centers. These workers carry out relevant extension duties in the four provinces.

The instructors in agriculture or the field instructors are located at those centers and also in the smaller farming centers. Instructors in agriculture have either a degree or a diploma in agriculture. Though they deal with the full range of farm problems, a few concentrate on field experiments and field demonstrations. Field instructors have practical farm experience but do not have any college training. Their duties are mainly routine inspections and certification of seed and crops. As the staff becomes more readily available, it is hoped ultimately to have such an instructor specifically on extension work for each 1,000 holdings.

Training of field instructors may be either the professional course for diploma in agriculture or bachelor of agricultural science. This provides a broad agricultural background. On appointment to the staff, each recruit is sent into the field for a course of instruction under one of the senior field officers. Each agricultural district has a kind of farming peculiar to itself, and experience gained in one district cannot be transplanted to another; for example, instructors concerned with citrus fruits, subtropical pastures, gumland soils,[7] and dairying where success of the farmer depends on how capably he adapts his practice to his soil pattern. In southern Canterbury, extension work is concerned with growing of cereals, management of permanent pastures, and growing of small seeds. On a terrain where the soil pattern is so much diversified, no system of training could equip a field officer for work in the field without the additional practical training in a particular district. To keep outlook broad, field officers are shifted from one district to another periodically. From 2 to 3 years of practical field experience are required before an instructor is capable of independent work in an isolated field station.

---

[7] Soils in the northern part of North Island from which gum of buried kauri trees has been exploited.

Administration

Apart from extension work carried out by the Department of Agriculture, the Department of Health, and the agricultural colleges, there is a considerable amount of work done under the direction of the four regional councils of adult education. (Brief reference is made later to the work of the two agricultural colleges. See p. 119.)

For the history of adult education in rural areas, See Adult Education in New Zealand (*8*) and Further Education for Adults (*3*). The following notes serve merely to bring up-to-date information contained in these two publications.

Organization for adult education

Under the Adult Education Act of 1947, the administration of government funds provided for adult education is placed in the hands of the National Council for Adult Education, which has the following functions:

To promote and foster adult education and the cultivation of the arts; to make recommendations to the minister as to the amount of the annual grant to be made to the National Council for Adult Education out of the moneys appropriated by the Parliament for that purpose, and to receive and administer and control the expenditure of all moneys granted to the council.

Below the level of the National Council, adult education is organized under four regional councils, which together cover the whole of the Dominion. Each regional council is, strictly speaking, an advisory body set up by a university college council. In practice, however, an increasing amount of authority is delegated to the regional councils.

The National Council for Adult Education has power to make grants not only for purposes of the work of regional councils, but also to other bodies concerned with adult education. The main body, assisted by the National Council, is the Country Women's Coordinating Committee, which is appointed jointly by the Women's Institute and the Women's Division of the Federated Farmers. Both these women's organizations have local institutes or divisions in most parts of New Zealand. The coordinating committee has itself employed itinerant tutors for such subjects as homecrafts and drama, and has worked on the plan of stationing a tutor in a certain limited area for a period of about 6 months. In the future, the National Council probably will cease to make grants direct to the Coordinating Committee, but instead will make additional grants to the regions, so that tutors may be seconded from the general regional pool to work with country women.

Discussion courses and country groups.—In remote country areas where the weekly presence of a tutor cannot be arranged, discussion groups are organized and supplied with material from the regional headquarters. Also available are specially prepared boxes containing mimeographed lectures and illustrative material; for example, prints, phonograph records, and books. This method of instruction has been in use in New Zealand for the past 30 years and is still an important feature of work in rural areas.

Some five or six community centers at present receive support from state funds. One of the most interesting developments is the establishment of an adult-education tutor in the mining districts of the west coast of the South Island. This tutor is responsible for assisting the work of some nine embryo community centers coordinated under a central committee. Though this experiment is not of many years' duration, it shows promise of having a most important effect on the social life of people living in rather desolate mining villages. The miners themselves agreed to support the scheme by a levy on wages.

Numerous experiments in community-center organization are taking place throughout New Zealand, but so far few community centers have been established in really rural parts of the country.

In recent years, interest in adult education has been stimulated by the organization of community weeks in small towns and villages. The general plan is to draw on the services of the regional Council of Adult Education and to seek assistance from the Agriculture Department. A varied program is thus assured, covering technical farming problems, stock demonstrations, lectures on general topics, and the screening of films, and musical performances. In some areas, community weeks have become an annual event.

Schools and short courses for adult education.—The Workers' Educational Association has for many years had summer schools at which there is always a fair representation of country people. The Auckland Regional Council has, during the past 4 years, sponsored a summer school of music which is attended by many country people. The work at the music school is of a high order and includes orchestral work, composition, and chamber and vocal music. The Wellington Regional Council is sponsoring a similar school. Short week-end schools and schools of a week's duration have also been organized specifically for country women.

Community arts service.—An important development has taken place in the Auckland region as an offshoot of the adult-education activities. This is the establishment of a community arts service, by means of which musicians, dramatic and ballet companies, and art exhibitions are sent on tour to remote towns. Local committees are responsible for local arrangements, and some of these committees have grown into more or less permanent bodies serving to stimulate the development of cultural facilities.

Agricultural colleges.—The two agricultural colleges of university rank—Lincoln College on the South Island and Massey College on the North—have taken a considerabe part in what may be called technical extension work among farmers. Lincoln College has a farm advisory service which on request will report on farming organization and suggest more efficient methods of farming. The college also sends groups of lecturers to rural areas to speak on local problems. Both colleges, but particularly Lincoln Colege, have conducted short courses and field days for country people, and members of both staffs are much in demand as speakers at farmers' gatherings.

Most of the work dealt with through the main adult-education organization is nonvocational. This is because adult education in New Zealand has traditionally followed the English pattern and leaves the more technical matters of farming to be obtained from other sources. A complete picture of the extension service requires, therefore, a consideration of the work of the Department of Agriculture, the Department of Health, and the agricultural colleges.

A few firms employ field officers, who advise about growing crops such as linseed and flax, but such advice usually involves entering into a contract with the farmer, and the field men are more concerned with making money for the firm than putting the interest of the farmer first.

Home extension work.—Extension education is carried out in rural areas by home economists and district nurses. There is one school of home science on the South Island. This is part of Otago University, Dunedin.

The school offers two courses, a 3-year diploma and a 4-year bachelor of science degree for undergraduates. A master's degree in science may be granted after 1 year's postgraduate study.

Students who plan to go into extension work may take either a diploma or bachelor's degree. In certain cases they are required to specialize in education during the final year, and considerable attention is paid to practice teaching in local elementary and high schools. Besides the major home economics subjects, the student is expected to have 1 year's study in the principles of economics. She may also take an elementary course in psychology.

Home-science graduate students may take a postgraduate course in dietetics, which is arranged by the department of health in four of the leading general hospitals. The training period lasts for 12 months, and during this time practical experience is gained in large-scale cookery, diet therapy, clinic work, and teaching of nutrition to nurses. An additional year of experience as a junior staff member is required by some hospitals before the nutritionist takes on the responsibility of an outside post. The department of health has two public-health nutritionists who are engaged in extension education.

A great deal of health education is carried out by the district nurse within the home.

Undergraduate training courses are held in most of the larger hospitals under the supervision of the Department of Health. Additional courses in child welfare and nutrition are required for graduate nurses who wish to undertake public-health work.

Home economics in New Zealand is taught according to American methods; a number of the senior members of the staff in the college have taken postgraduate work in America, and American textbooks are used by the students.

Unfortunately, the Otago University affords few opportunities for study in sociology or anthropology. An understanding of these sciences might have promoted more successful extension work among the Maoris.

The training courses for district nurses are excellent. The nurse, with her broader experience, has often applied her education program, with greater success than has the home economist, to problems of home management of the Maori and white farmer.

Young farmers' clubs.—The young farmers' clubs are an important medium for establishing new ideas and practices. Members of these clubs usually start at 16 years of age. The Department of Agriculture organized and largely financed a scheme of boys' and girls' agricultural clubs, which has developed in many parts of New Zealand. It has been eminently successful in the county districts and good work is being done. A senior division for young people who have left school has also been added recently. The calf-club work is a popular phase of these clubs.

COMMITTEE MEMBERS: Montell E. Ogdon, Office of Foreign Agricultural Relations, United States Department of Agriculture, Chairman; R. T. Allman, Food and Agriculture Organization of the United Nations; Trevor C. Bell, Australian Embassy; Beatrice Billings, Extension Service, University of Massachusetts, Amherst; Edmund deS. Brunner, Teachers College, Columbia University, New York, N. Y.; Mary L. Collings, Extension Service, United States Department of Agriculture; J. U. Garside, Australian Embassy; Susan V. Holmes, Cornell University, Ithaca, N. Y.; George R. Patterson, Canadian Embassy; James D. Raeside, New Zealand Embassy; Marjorie Scott, Food and Agriculture Organization.

Latin America

Costa Rica, El Salvador, Guatemala, Haiti, Honduras, Mexico, and Puerto Rico; Argentina, Bolivia, Brazil, Chile, Colombia, Paraguay, Peru, and Venezuela

Committee Procedure

Because of the large membership of the Committee for Latin America and the number of countries involved, the membership was divided into two working groups, one dealing with the Central American countries and the Caribbean Islands, and the other with South American countries. The members of each subcommittee worked thereafter in their individual groups. The two groups met at intervals to discuss matters relating to problems and programs of extension in the individual countries concerned.

The entire Latin American group then met for a discussion of the problems that were more or less common to all the countries, in order to coordinate the individual country reports. As far as possible, the discussions and reports are limited to those problems about which something is being done and to those that permit a practical and applicable extension approach.

It is to be expected, however, that the discussions on farm, home, and rural-life problems and what and how something is being done about them, who is concerned in changing them, and what institutions and organizations could be utilized, will vary somewhat among countries and according to the individual experience of the people who have prepared the reports.

General Problems

A situation does not become a problem until it is posed in terms to which human ingenuity can be applied. In attempting to do this the members of the committee have divided the various possible extension projects into farm problems, home problems, and community problems. If we seem at times to be excessively pessimistic and to neglect mention of progress made, the reader will recall that we have attempted to indicate the situations needing attention rather than to describe them completely.

Because of the prevalence of hilly or rolling land in the Latin American countries, crops are often planted on slopes. Generally, flat land is used for pasture, and the hillsides are used for crops. Under such conditions, and with leaching prevalent, soil saving and maintenance of fertility both become difficult. Shifting culture and fire farming have been the result in many regions.

Although certain crop and pasture plants have been developed from indigenous species and others have been introduced, most of these have been established through the trial and error of farmers. Rarely, however, have plants received the benefit of either systematic selection or plant breeding, so yields are understandably low.

Pests and diseases thrive the year round, and little knowledge, equipment, or materials are available for their control. Much work must be done in selection and breeding of disease-resistant varieties.

Cultural practices with standard crops under the conditions prevailing have been adapted through years of experience. When new crops are introduced, new insects or diseases appear. As other change occurs, the necessary adaptation is either prolonged or impossible without technical advice.

The conditions mentioned, the general absence of access to new crops, and the requirements of commercial farming have made for the growing of only a few basic crops. Food crops such as yucca, beans, corn, and rice, a few fruits such as bananas, pineapples, and citrus, and cash crops such as cane, coffee, and bananas, have filled the minimum needs for food and cash. The growing of protein foods and their acceptance into the diet have not become widespread. Neither has it been possible to maintain fertility and distribute labor by systematic rotation.

Livestock and poultry developed in the temperate zones have generally been poorly adapted to the Tropics.

Pastures suffer from drought in the drier sections and lack feeding value in the areas of high rainfall. Many areas are without pasture or any other adequate feed during the dry season. Parasites and diseases reduce livestock populations and cut production of milk, meat, and eggs.

Although certain areas have mechanized to a high degree for the production of industrial crops, the machete, the shovel, and the hoe are the usual equipment. These simple tools often fit the farming pattern of today. But standards of living are held down by low production per man. A gradual transition to better hand tools, more use of animal power, and, eventually in some places, to tractor power is indicated.

A number of problems relate directly to the home. The diet is often unbalanced. Variety in food crops is lacking, and cooking practices often reduce the value of foods.

Houses are generally crowded. Light and ventilation are sometimes inadequate; floors are often of dirt. Facilities for food preparation and furniture, including beds, although desirably simple, afford room for certain improvements.

Flies, mosquitoes, and other pests present an economic problem of control, but the people are unaware of how dangerous these insects may be. As with field crops, home-produced vegetables and fruits lack variety.

Waste-disposal facilities, as is usual when the relationship between sanitation and disease is not appreciated, are usually lacking. Water pollution likewise promotes gastrointestinal disturbances. Simple and effective latrines would be within the means of most if their sanitary importance were emphasized.

Usually the farm family's time is not fully occupied, even when all effort possible has been used profitably in improving the farm business. Certain slack periods are apt to occur when home industries could be utilized to raise the family income. The people of certain areas in the region possess skills in weaving, pottery, and basket making that could be taught to advantage in other areas.

Many problems exist that can be approached only by groups of people or upon a community basis. Among these are problems relating to water-supply systems, roads and bridges, storage facilities, and, perhaps, cooperative credit, and many problems of recreation.

Generally the rural communities have had no access to information about world experience in farming and improvement of rural life. Much of such information would be adaptable if it were available. However, a significant number of problems could be solved through research. Except in a few areas, the application of science to agriculture has not been started. This is a fundamental problem resulting from lack of continuity of effort, scarcity of trained personnel, and shortage of funds for investigational purposes. In most areas, the economic value of research has not been demonstrated.

When facts are available, satisfactory means for getting them to farmers and farm homes and into operation have seldom developed. This is a field for research in method and for adaptation of the experiences of other parts of the world.

Basic Social Organization

In this respect as in many others, wide variation exists among the countries of Latin America. The great majority of the population of every country in the region lives in rural areas. But significant differences in pattern of settlement exist. In some countries, such as Mexico and Haiti, farm people generally live in compact villages, which reduces isolation of individual families and makes social organization less difficult. In many Latin American countries, however, families live on scattered farmsteads some distance from each other and from the trading center. Under these conditions social intercourse is more restricted, and organization of a formal character is more difficult to establish and maintain. The absence of roads and other communication facilities tends to accentuate this difficulty.

It is generally agreed, however, that throughout the entire area the family as an institution is particularly strong. The bonds between husband and wife, parents and children, brothers and sisters, and relatives beyond the immediate household dominate the social order. Formal religious organizations occupy positions of importance in the social structure of some countries but are weak or almost absent in others. Usually religion has a peculiarly local significance and centers about a village patron saint. Where the church exists as an important agency in the community, it must be considered in setting up any extension program.

Though formal educational facilities are available to most people in towns and cities, they are frequently lacking in rural areas, where most of the population of Latin America resides. School attendance is compulsory for children of specified ages in most of the countries, but frequently the laws are not enforced. Schools will be important to the extension worker in some areas, but of little value in others.

Farm organizations exist in some countries. Often these are established on a commodity basis, such as associations of cattlemen, sugar growers, tobacco growers, and henequen producers. These special-interest groups are often concerned more with getting favorable legislation for their particular industry than in sponsoring educational programs. Whether or not such agencies may be useful in extension work will depend upon the nature of the project involved.

The small farmer is more often unorganized, although in some countries associations are coming into being. In Mexico, for example, a large part of the rural population is organized into ijidos. Farm laborers are being unionized in several of the countries, and may become useful channels for certain types of extension work, such as education in health and nutrition.

Cooperatives are not highly developed in most countries, but people are favorably disposed toward the general idea. Thus a basis for their development exists in public opinion. In most countries examples can be found of successful cooperative activities that might be used as models for further extension of this type of formal organization.

Finally, practically all of the countries have ministries of agriculture that engage in some form of agricultural education, direct or indirect. Often, if not always, the local representatives of the ministries are charged with regulatory as well as educational functions. Nevertheless, they represent one of the official channels through which extension work is carried on. In addition, the ministries of education and health are valuable official resources for channeling extension information to the population. Their effectiveness and the scope of their activities vary somewhat from country to country, but a wise extension worker will not neglect to use these branches of government to assist in the implementation of extension programs.

Costa Rica

Rural-life problems

The farm, farm-home, and rural-community problems of Costa Rica are:

Distribution of population.

1. The population in the central plateau area is overcrowded; 60 percent live in this 20-mile area. Farm units here are used in the main for coffee. Diversified units are in the great majority of cases not large enough to support the average-size family.
2. About 12 percent of the population lives on the Pacific slope, which covers one-half of the country.
3. The remainder of the population lives on the Atlantic coastal plain, which covers 43 percent of the land.

Health conditions.

1. Protein is lacking in the daily diet.
2. Adequate medical facilities also are lacking and infant mortality is high.

Insufficient government cooperation.

1. A very small percentage of the national budget goes to agriculture.
2. Occasionally, government officials are unable to cooperate in improvement projects.

Inadequate transportation facilities.

1. Dire need for adequate transportation facilities. Some communities do not have land outlets to market.

Need for improved methods.

1. Not all rural communities are being reached with information on improved methods of farming and livestock raising.

Illiteracy.

1. For Latin America, literacy is fairly high.
2. Outside the Meseta Central (central plateau) area, school buildings and other school facilities are inadequate. More secondary schools are needed in the country as a whole.

Inadequate housing.

1. Improvement is needed in housing facilities in rural sections.

Present conditions

Because of soil depletion, the population has moved westward to the centeral plateau in search of naturally rich soil for the growing of coffee and for a more agreeable climate. Malaria and other health hazards are also factors contributing to the westward migration.

The Division of Health and Sanitation of the Institute of Inter-American Affairs employs nurses and doctors to help improve health conditions in the country. Health units have been constructed, where physicians and nurses provide medicine, especially for the removal of internal parasites. This program was initiated principally for school children.

There are sections in Costa Rica that have no ground outlets to the central plateau for market, and as a result farmers have to transport by air and pay high rates. The need for better roads is great.

Concern for change

An agency that is at present working to help solve the aforementioned problems is the newly organized Extension Service known in Costa Rica as STICA (Servicio Tecnico Inter-Americano de Cooperacion Agricola), which is now financed by the Institute of Inter-American Affairs of the United States and the Costa Rican Government.

The Office of Foreign Agricultural Relations, United States Department of Agriculture, has sent, at the request of the Costa Rican Government, a representative who is working with both that Government and the Inter-American Institute of Agricultural Sciences. A program of training and research is being carried out to assist the country.

Other organizations set up to carry on informal rural educational work are the National Bank of Costa Rica and Instituto de Fomento, both of which extend credit to farmers and employ agriculturally trained men to work with farmers.

The National College of Agriculture has reoriented some of its courses toward preparing people for agricultural work. The Inter-American Institute of Agricultural Sciences is at work solving Costa Rican problems. The institute is using this country as the laboratory in its work for the hemisphere. It is giving valuable aid in providing information for farmers and livestock raisers. Agriculturists are very willing to accept improved practices recommended by the institute.

The STICA has distributed better seeds when they have been available and has a series of programs for control of diseases, insects, and weeds, and for crop improvement.

The Inter-American Institute of Agricultural Sciences has developed adapted varieties of crops such as cowpeas, sorghums, peanuts, and corn, and has tested various weed-, disease-, and insect-control methods that are being used by the Costa Rica Extension Department.

Extension approaches

Several farmers are now conducting experimental plots and demonstrations, under the direction of the extension department, on better selections of corn and potatoes; coffee improvement; pasture improvement; and soil conservation, vegetable production, and fertilizer.

The 4–S Clubs, which are similar to the 4–H Clubs in the United States, are in operation in Costa Rica under the supervision of the county agents. They provide an opportunity to educate youth in improved farming practices and homemaking.

Attitudes

The attitude of the farmers is excellent, and their leaders both in government and in the field are of the type that will accomplish much for the country. Costa Rica is ordinarily a peaceful country and takes full advantage of opportunities presented for its greater good.

El Salvador

Agricultural extension, in all its ramifications, is a scientific agricultural medium that deals primarily with farm people, causing them to effect certain changes in their agricultural habit for the betterment of themselves, their community, and their country.

Rural-life problems

In listing the major farm, farm-home, and other rural-life problems of the small country of El Salvador, one shall have to think of them as problems to be faced in the immediate future rather than over a long period of time.

Five basic problems must be considered first:

1. A crowded population, of which 90 percent, because of lack of opportunity and incentive, are not contributors to any progressive social pattern.
2. Poor, shallow soils covering hilly, broken land throughout the entire country.
3. The psychological effect of climate upon the habits of man.
4. Absentee landlordism.

Ninety-five percent of all farm owners live in the city and visit the farm only occasionally. The problem of a large number of farms but few farmers exists because most landowners are wealthy (76 percent of the land is owned by 20 percent of the people). Therefore, the sons of farm owners find other diversions far more interesting than learning about agriculture and putting the practices involved to work. Also, according to custom, they can always have a majordomo, who can do the planning for them. The obstacles to solution of this problem involve age-old custom and tradition.

5. Soil.

The present practice is to farm all available land, including extremely steep (45-degree) slopes, the reason being that country people, in order barely to exist must have every bit of food that can be raised.

The major obstacle to improvement is the population pressure on the land.

Concern for change

Factors to consider in the problem of an ever-increasing population are, that more people without an increase in land area mean less food, where food is already scarce, unless soil-improvement work is done and field crops, vegetables, fruits, fats and oils, and livestock production are increased by improved selection and breeding.

Concern regarding this problem is shown by the Ministry of Agriculture and other governmental agencies, private groups, and the people themselves, who are becoming interested in increasing numbers as they learn that assistance and information are available to them.

Because of the poor soil, El Salvador has an organization called Amigos de la Tierra or Friends of the Land. This social group sponsors various plans to aid in conservation work. The Ministry of Agriculture and the Centro Nacional de Agronomia, an agricultural station cooperatively sponsored by the United States and El Salvador, are actively engaged with problems concerning soil conservation. The projects include (1) measuring run-off, and (2) erosion control by check dams, plantings for soil improvement, terracing, and grass barriers.

The Friends of the Land, in cooperation with the Ministry of Agriculture, and with the technical advice of the Centro Nacional de Agronomia, are now working toward two common goals: (1) Tree planting (reforestation), with emphasis on oil-producing trees; and (2) improved and increased food crops and livestock. One group furnishes the seed and the other takes charge of planting and handling.

Extension approaches

Extension on an organized basis began in El Salvador in November 1947. Various extension methods are being used, some of which are:

A general extension operation circuit, first established by tying extension activities in agriculture into various other activities that were already functioning, such as farm groups, other national agency activities, and local community municipality set-ups.

A weekly extension or agricultural-station column in the newspapers.

Circulars presenting current agricultural information, which is in demand by farm people.

Training more personnel in extension techniques and procedures.

Establishment of a seed production and distribution system to benefit most of the farm people.

A system of personal farm calls to accomplish the most with the least expenditure of time and money.

Demonstrations, set up in various areas, showing results of research developments.

Various field days and group meetings to acquaint people with the work of the agricultural station.

A mailing list for the purpose of exchanging pertinent material with other agricultural stations.

Work on an extension handbook on tropical agriculture.

Training of students to act as departmental agents, who will be directed from the agricultural station.

So far all these steps have been successful and will be continued and expanded. The placing of extension agents in each of the 14 departments of El Salvador is being contemplated. The Ministry of Agriculture will furnish the salaries for these men. Their direction will be the responsibility of the main extension headquarters in the Centro Nacional de Agronomia.

The extension and educational job in El Salvador is done by every technician and employee of the agricultural station, cooperating with the Ministry of Agriculture and the farm people of El Salvador.

Orientation to the culture

There are many customs that greatly affect extension work. These can best be learned by contacts with farm people over a period of time.

Guatemala

The major farm, farm-home, and rural-community problems of Guatemala are:

Insufficient land for the masses, lack of humus in the soil, and soil erosion.

Inadequate sanitation and health facilities.
Inadequate school facilities.
Need for trained national personnel.

Present practices

To a large extent the land is controlled by large landowners who employ rural people to do the farm work for the privilege of farming a small plot of land on which to produce something for themselves. This has been the custom of the country for a long time. The main obstacle to improving this situation is the great difficulty of breaking a tradition that has existed for centuries. A planned program by the Government will be necessary to overcome this obstacle. This might be effected through land purchase and distribution of lands already in production, by opening new areas subject to irrigation, and by improving living conditions in the coastal jungle regions where increased facilities for health, schools, and transportation are needed. Large areas of land suitable for livestock raising are unused. Guatemala imports feeder cattle, which could be produced in that country if the breeding and improvement of cattle could be stimulated.

In densely populated areas, where small farms are prevalent, soil erosion and lack of humus in the soil account for the low production of food crops on lands that have been farmed for generations without any change. Generally, the people do not realize that this situation exists, and only by creating a desire through education and demonstration can a slow change for improvement be made.

Most of the rural population are illiterate because of the lack of rural school facilities and trained school teachers; the need for health education; and ignorance of rural programs for improved agricultural practices. Devotion to traditions and customs must be overcome, particularly among the Indian population, before much progress can be made.

Concern for change

The problem of land tenure is of great concern to the large landowner, the Indian population, the church, and the Government. The Government now owns large areas of land taken from the Germans that may eventually be divided into small holdings for more people. To date no potential achievements are evident in this regard. The finqueros (landowners) have their national organization of agriculturists and the farm laborers are being organized by the national labor organizations.

Any program to help improve this and the other problems mentioned will have to be carried out through the rural educational system, which is now being organized on a sound basis through the church and the various Government departments.

The Ministry of Education, with the assistance of the Education Division of the Institute of Inter-American Affairs of the United States, has organized a cooperative rural educational program, involving 20 local school centers, for the training and supervision of teachers, and school programs in about 400 individual rural schools. This school program covers the most densely populated areas of the country, and will reach a large number of children who, heretofore, have had no opportunity for any kind of formal education. The program will be elementary in nature and incude the three R's as well as education in sanitation, health, and nutrition. School gardens will play an important part in nutrition teaching.

In other areas of the country, church groups and missions are taking the lead in rural education, working through youth groups on agricultural projects such as home gardens.

Extension approaches

Extension work in Guatemala has been attempted by local government during the past 3 or 4 years, but has failed for lack of competent personnel and because of political reactions. As a result, the Ministry of Agriculture has abolished this program and will carry on its work through departments. These departments will deal with soil conservation, through demonstrations for soil-erosion control; farm-machinery utilization for small farmers; nursery production of citrus and other fruit plants for distribution; and insect-pest and disease control. Experience has shown that this fomento type of program is a practical way of reaching the small farmer through services and improved varieties of farm crops and breeds of animals.

The Instituto Agropecuario Nacional (National Institute of Agriculture and Livestock), a cooperative program of the United States Department of Agriculture and the Government of Guatemala, is starting an extension program to coordinate its work with that of the local ministry and other agencies, to render rural people a technical service, and to help them put into practice the results of the research program of the Instituto and assist in other rural problems.

This will be made possible by employing and training some Guatemalan assistants in extension methods that eventually will form the basis of a sound extension service for Guatemala. Training of national personnel for rural leadership in local education, health, and community activities is the principal approach to the problem.

Orientation to the culture

Some of the important problems that must be thoroughly understood before the approaches and methods to be used are decided upon are those relating to the temperament of the people and their lack of interest in change; social and religious customs; local community and government organizations; and the reluctance to move from established communities, particularly in the highlands, to lowland areas of better soil.

Haiti

Rural-life problems

The major rural problems of Haiti are:

Pressure of a dense population on limited land used destructively or inefficiently.

An unstable land-ownership.

Undeveloped land areas.

Present practices

Modern practices are almost wholly lacking. The hoe and machete are used throughout the country; fertilizer is rarely used and rotation is seldom practiced. Soil and forest are destroyed in the desperate development of new land. Land use is inefficient because of the lack of more modern equipment and the system of returning land to bush for refertilization. Because titles to the land are insecure, landowners are hesitant to adopt permanent improvements. Significant areas remain relatively unused because of problems of irrigation and drainage, there being neither the knowledge of how to develop them nor the capital with which to do so.

Many factors are involved that can be applied equally to all the major problems listed here. Education must be placed first, both as to technical methods and general public enlightenment. Then, programs for improvement are without organization. This is attributable partly to lack of public enlightenment and partly to the general financial conditions of the country.

The obstacles to improvement are:

1. The lack of continuity in policy regarding technical, and even nontechnical, personnel in government.

Haiti is relatively well supplied with educated people, but too often they are not utilized. Because of this discontinuity in policy and procedure and of ineffective long-term planning, public or private capital, which would be one means for improvement, is difficult to obtain.

2. The pessimistic attitude on the part of those who potentially might aid Haiti, the rapidly increasing population, and the continual depletion of resources.

However, the difficulty of the problem and the negative attitude of those in Haiti who view the situation as hopeless only serve to point out that better planning and execution are required, and that the effectiveness or ineffectiveness of a program is related directly to the methods used and the effort expended.

3. The lack of assurance of a sustained program of outside aid, which is essential if Haiti's problems are to be alleviated.

Some of the problems encountered may be attributable partly to (*a*) intermittent rather than continuous programs for improvement, and (*b*) lack of maintenance of projects initiated.

Concern for change

Both within Haiti and without, there are many keen students of her problems. The Government itself has demonstrated deep concern and an alterness to take advantage of opportunities for assistance. This is envinced by continued sponsorship of the food-supply program of the Institute of Inter-American affairs on the basis of continually increasing contributions. The fact that Haiti obtained the first over-all technical advisers' mission from the United Nations (in 1948) is additional evidence. An invitation to the world to visit Haiti and to participate in its world exposition shows her desire to enlist a sympathetic understanding of her present and potential status. Haiti's aggressive step to obtain an Export-Import Bank loan toward developing the 150,000-acre Artibonite Valley, a $6,000,000 undertaking, is also significant.

In carrying out programs in Haiti, the need for closer association in all American activities is evident, including those of governmental, commercial, and religious organizations. Close coordination would tend to assure better designed programs that would be continued.

Extension approaches

The Haitian Government maintains an agricultural experiment station, a school of professional agriculture, a school for rural teachers, an agricultural extension service, and a forestry service. The Government has also adopted other approaches to the problem of agricultural development. Shada, a corporation owned by the Government, is operating successful projects for production of sisal and lumber. Scipa, an agricultural agency of the Government, jointly financed by Haiti and the United States and administered by the technical staff provided by the Institute of Inter-American Affairs, has been developing programs in food production. These include projects such as livestock management, irrigation and drainage, and use of machinery. The national coffee office operates to improve the quality of coffee and the Regie du Tabac has recently been organized to bring the tobacco industry under control and develop it. Development of an Artibonite Valley authority is being considered for operation of the rehabilitation program for that area.

Although the basic problems listed at the beginning of this report are not necessarily ones that can be met purely through the extension approach, public enlightenment, farmer understanding, farmer organizations, and youth clubs that result from extension might become the means for an attack on these basic problems.

Haiti's nation-wide extension service consists of 62 agricultural agents scattered throughout the districts. The total budget is $78,000, of which $45,000 is for salaries. The program operates under the serious handicap of having police as well as educational duties. This situation has been recognized by the Government, and Scipa has designated areas in which to establish extension activities on a basis more applicable to the needs of Haiti. Currently Scipa has extension offices at Villard, St. Raphael, La Gonave, Fonds Parisien, and Jacmel.

By a recent informal agreement with the President, Scipa has now been authorized to expand its extension activities into the key agricultural areas of the Aux Cayes Plain, Gateaux, Aquiro, Cul de Sac plain, Gonaives plain, Moresteques plain, and the island of Tortus. It will act for extension exclusively in these areas.

To date, only moderate success has been enjoyed by Scipa in the development of extension work because (1) an extension service has already been established on a somewhat inadequate basis; (2) its extension activities have been confined to limited areas and operated in conjunction with its irrigation projects; and (3) the main efforts have been toward development of the Artibonite Valley. The recent agreement with the President and the arrival from the United States of two technicians in the extension field should enable Scipa's extension work to progress. Extension is believed to be one of the more important single approaches toward increasing the efficiency of Haiti's agriculture, which is one of its basic problems.

Progress is also being made toward the problem of land ownership. As a requirement for consideration of a loan by the Export-Import Bank for the Artibonite development, a law was passed by the National Assembly requiring a settlement of ownership in the area.

Naturally, implementation of any law of this nature will be difficult, and considerable outside assistance will be required.

Undeveloped land areas are of concern to the Government. With the help of Scipa, projects have been started in the Artibonite Valley, Fonds Parisien, St. Raphael, and elsewhere both to bring new lands under cultivation and to rehabilitate the original irrigation systems installed by the French. The problem here is not one of construction, as much successful work has been done in Haiti in the past and no doubt will continue to be done in the future. The problem is maintenance—sustained operation on an effective basis. Failure to accomplish this in the past has greatly affected Haiti's agricultural progress. Here agricultural extension must meet its test.

Honduras

Rural-life problems

The major farm, farm-home, and rural-community problems of Honduras are—

> The lack of sanitation, which contributes to the prevalence of dysentery and malaria among rural people and results in a low level of farm production.
>
> Malnutrition, which often can be attributed to ignorance and superstition rather than to lack of opportunity to correct deffciencies in diet.
>
> The way in which available land is distributed, which results in peonage of a semifeudal type and tends toward a defeatist attitude.

To the foregoing could be added a long list of social and political problems, all of which have a strangle hold on the rural economy. Credit facilities are lacking, as are small hand tools and implements, and there are no home industries and handicrafts.

Present conditions

The prevalence of dysentery and malaria is the result of the insanitary conditions under which the great majority of the rural people live. Doctors and nurses are few, and medicines for treating common ailments are scarce.

The Institute of Inter-American Affairs of the United States has made some improvements in conditions, but the work has to be extended by means of visiting nurses and free clinics. The Government should contribute more money and personnel toward programs of this type.

Considerable malnutrition among the rural population exists because too many starchy foods are used. There are prejudices against leafy vegetables, milk, eggs, meat, and fruits because of superstitions, lack of seed, and no transportation, refrigeration, or canning facilities. Bulletins, charts, and other visual aids are needed in schools. Also materials for insect and disease control are needed for growers of food crops.

The small farmer and wage earner have to compete with far too many large estates that produce very little income even for the owners.

There is no legal obstacle to owning small tracts, but the lack of market and credit facilities and the complete absence of roads and social life of any sort make it impossible for low-income families to migrate to government land or large estates. Peonage offers the greatest security.

Credit requires ample security, usually city properties, and draws 2 percent a month interest. "Healthy" areas are steep, rocky, and often dry. Jungles are unhealthful, and clearing is expensive to maintain and requires heavy initial investment. It is more practical to fell and burn 5 to 10 acres of forest, grow one or two crops, and move on.

Concern for change

A concern for change is shown by foreign companies, large estates, credit institutions, and by the officials of the national Ministry of Agriculture, national Ministry of Education, and those of other departments.

Dietary deficiencies result in an unstable labor supply, poor man-hour production, and a rapid, uneconomical turn-over. Attempts by some companies to produce food as a side line have been rather successful. The large estates produce bananas, coffee, rice, beans, and cash crops, and some low-grade cheese. Vegetables and native fruits usually are not grown. Department officials are by law supposed to "increment agriculture," but are given neither the assistance nor the funds with which to do so. The ministries need help in organization, and funds for training native personnel. The desire is evident but the knowledge is lacking.

Extension approaches

Notable success has been attained by the Division of Health and Sanitation of the Institute of Inter-American Affairs. The program needs to be expanded to provide one doctor and a registered nurse in each department, preferably native or Spanish-speaking personnel. Government dispensaries and clinics are needed. Close supervision would be required. Sanitary engineers are needed in the National Health Ministry. The extension phase of this program could well be included in a rural agent's duties. These would include work in home sanitation and work on diet.

Agricultural education is a long-range program, but rural agents could work with farmers and school children through clubs and the like, and make a start such as was made in the early days of Extension in the United States. However, the curriculum for training children in agricultural endeavor should be started at the same time. An attempt should be made to hold summer training sessions for all rural teachers. Facilities exist at the agricultural schools located at Zamorano and at Toncontin. The one at Zamorano is supported by a private company, and the one at Toncontin is a cooperative venture supported by the Honduran Government and the Education Division of the Institute of Inter-American Affairs. These schools have undoubtedly had considerable influence and given considerable assistance to surrounding communities in programs for agricultural improvement.

Orientation to the culture

Rural people seem to be about the same in every country. Honduras realizes its predicament to such an extent that no nationalistic or other ties would prevent its people from working with the people of other countries.

Mexico

Rural-life problems

The principal problems of Mexico appear to be—

Problems relating to the farm.—

SCARCITY OF FARM LAND

Currently cultivated farm land is scarce in relation to the number of inhabitants who must make their living from agriculture. The problem is rooted deeply in the geography of the country in relation to the number and distribution of the population. Mexico is generally mountainous, with only about one-third of the area classified as more or less level. Much of the level land receives inadequate rainfall for the production of crops. Northern Mexico has vast areas of comparatively level land, but rainfall is so low that only through irrigation can crops be grown. Furthermore, the streams that could be utilized for irrigation purposes in the north are few in number and, in general, are unfavorably situated for providing vast irrigation projects. The lowlands of the coastal area usually receive adequate rainfall, but are sparsely settled because of the fear of tropical diseases and the absence of communication facilities. The masses of the population, therefore, are distributed in the highland sections, where land holdings are generally very small and much of the terrain is uneven.

The scarcity of good farm land is increasingly felt because of the rapid increase in population that is now taking place. Mexico is at present experiencing one of the most rapid increases in population of any of the countries in the Western Hemisphere, and this greatly accentuates the land problem. More than two-thirds of the population make their living through agriculture, and industrialization is only beginning to develop. For a long time to come the bulk of the population of Mexico is likely to continue to live in small agricultural villages and attempt to wrest a living from the land.

ABSENCE OF MODERN TECHNIQUES AND PRACTICES

Most of the rural people follow the same procedures that characterized the colonial era. The wooden plow, the hoe, and the machete are the most common agricultural implements, and reliance upon hand labor is heavy. Subsistence agriculture generally prevails, although there are important exceptions. Corn and beans are the principal products, and commercial agriculture is limited to specialized areas, where irrigation and modern machinery have been introduced.

Adaptation of crops to soils is lacking in many districts, and diversification is limited. Fertilizers are not generally used, crop rotations are rarely followed, and low yields of predominant crops tend to prevail. Row crops are often planted on steep slopes, with the result that soil erosion is widespread and serious. On the peasant farms generally, the livestock are of poor quality, and improper breeding practices and inadequate care of both livestock and poultry tend to prevail. Many of the pasture lands are decidedly overgrazed.

Problems relating to the home.—

HOUSING

According to the housing census made by the Mexican Government in 1939, 45 percent of all dwellings in Mexico are classified as huts and hovels (jacales, chozas y barracas). These are makeshift structures usually with only one room, a dirt floor, no windows, practically no furnishings, and no chimney through which smoke may escape. Sometimes a lean-to serves as a kitchen, but often the cooking is done oven an open fire in the one-room structure. Family members often sleep on the ground or floor on a mat, with a blanket for covering.

DRINKING WATER

The housing census of 1939 showed that more than one-half of the inhabitants of Mexico (56.6 percent) live in houses where no drinking water is available. Often the water must be carried in pots or cans from streams or stagnant pools at a considerable distance from the home. Contaminated drinking water probably causes one of the most serious health problems in Mexico.

DIET

The diets of the Mexican people have never been adequately studied. Corn and beans are the basic foods, and little use is made of green vegetables. Family gardens generally are not kept and the diet contains little variety.

HEALTH AND SANITATION

Mexico has a high death rate and an unusually high infant-mortality rate. The most common diseases are (1) diarrhea and enteritis, which account for one-fifth of all deaths; (2) pneumonia, which accounts for 15 percent; and (3) malaria, which accounts for 5.6 percent. Diarrhea and enteritis are probably the result of poor diet and lack of sanitation. Pneumonia is associated with inadequate housing and clothing in the highland areas; and malaria is prevalent, particularly in the tropical lowlands, probably because of improper drainage and lack of preventive measures. Animals are kept near the house, and there are no latrines. Absence of screens makes prevalent exposure to flies and mosquitoes. Refrigeration is not available.

HOME INDUSTRIES

Spare-time industries and handicraft work with which to supplement the family income are rapidly disappearing. There are important exceptions, of course, but much could be done to utilize the spare time of family members in the production of handicrafts that would supplement the income from small farms.

Problems relating to the rural community.—

EDUCATIONAL FACILITIES

In 1940, about one-half of the population of Mexico 10 years of age and over was illiterate. Although the rate has been reduced somewhat since that time, illiteracy is still high. Many rural communities are entirely without schools and others have only two grades. Most rural communities have few books, magazines, newspapers, or other materials that would make for literacy.

ROADS

Many rural communities are completely isolated from the outside world because of the absence of roads. This makes the marketing of farm products difficult and accentuates the social isolation of small communities. The mountainous terrain of much of Mexico makes the building of roads expensive and difficult.

RECREATIONAL FACILITIES

Organized recreational facilities for young people are not extensive.

PERSONNEL

There is a serious shortage of personnel with which to furnish leadership in solving local problems effectively.

Concern for change

Changes have been and are being made rapidly in Mexico. Until 1910, the country's resources were controlled largely by a small minority of the population. It is estimated that in 1910, 90 percent of the rural inhabitants had no land of their own. A condition of semifeudalism tended to prevail. The period 1910–20 was one of armed conflict or civil war, in which the objectives of the revolution crystallized around the battle cries of land and liberty and land and books. Since 1920, the Government has attempted to carry out what are considered to be the ideals of the revolution. These are generally referred to as land for the landless, schools and books for the illiterate, freedom from tyranny and oppression, and improvement in the welfare of the masses.

Although many mistakes have been made, there has been significant progress. An agrarian department was established by the Government to break up large holdings for distribution to the workers and peasants. During the period 1915–45, 75 million acres of land were redistributed to 1,700,000 persons. These recipients were organized into agrarian communities known as ejidos. In 1940, there were 14,683 ejidos, each with about 70 families. Unfortunately, much of the land was broken into units that are too small to operate efficiently.

The average ejido family does not yet have enough farm land to provide an adequate living. Rapidly increasing population makes the small size of the holdings still more serious.

A division in the Ministry of Agriculture is specifically devoted to the organization of ejidos along democratic lines. A national ejido bank also is organized for the purpose of providing credit to ejidos. A Ministry of Hydraulic Resources has been organized to develop water supply in the form of irrigation on a national scale. Thousands of hectares of land have been made productive through irrigation. A Ministry of Public Education is organized to provide educational facilities for the population. More rural schools have been established and campaigns against illiteracy are being waged. A Department of Public Health is organized in the Ministry of Public Assistance. This department has cooperated with the Ministry of Agriculture in establishing health services in many ejidos. A Division of Indian Affairs, in the Ministry of Education, has special responsibility for working with indigenous groups.

Extension approaches

Mexico has no organized agricultural extension service. A number of programs, however, could be classified as extension by nature because they use important extension approaches. These are found in various governmental agencies.

Rural cultural missions.—The specific functions of the Department of Cultural Missions, in the Ministry of Education, are to improve the economic, social, and cultural conditions of rural communities in some of the more backward areas of Mexico. These missions were first organized in 1923, largely as traveling normal schools. The program was discontinued from 1938 to 1942. In 1942 the missions were reorganized and reinstituted, and have been functioning regularly since that time. In 1945, there were 37 rural missions located in 37 different areas of the Republic. Each mission contains a personnel of 9 or 10 people, as follows: A director or chief of the mission, who must be a normal-school graduate with at least 5 years of experience in rural-life problems, a social worker, a nurse and midwife, one or more construction teachers, two or more teachers of trades and industries, a teacher of mechanics and operator of a motion-picture projector, a teacher of music, and a leader of recreational activities.

These specialists, organized under the director, are responsible to a central office in Mexico City. Each mission is assigned a definite locality in which to operate for a period of 1 to 3 years. Usually a large, centrally located village is chosen as headquarters, and 12 or more smaller villages in the immediate vicinity are included in the sphere of operations. The mission uses the community approach to the solution of rural problems. It makes a frontal attack on all the more pressing problems of living. The mission also encourages the participation of local inhabitants in the program and utilizes existing organizations as channels for carrying it out. The methods used seem to be reasonably successful, although there are several difficulties: The missions do not remain in one place long enough to bring about many fundamental changes in rural life, and they are handicapped by lack of adequate funds with which to employ trained personnel.

The Banco Ejidal.—The National Ejido Bank is organized to grant credit to ejidos for financing their farming operations. The bank has agencies scattered throughout the country and its loans are closely supervised. Trained agronomists are usually in charge of the local agencies. These agronomists advise and counsel the ejidatarios regarding the improvement of their methods of farming so that they will become good financial risks. Much of the work carried on by the Banco Ejidal could well be classified as extension. Some of this is very effective.

Public health.—There is a division in the Department of Public Health known as the Bureau of Rural Hygiene and Social Medicine. This carries on a health program cooperatively with some of the more successful ejidos. In some areas this program has been very successful. The ejidatarios contribute fixed sums each month and are entitled to health services at centers provided by this bureau. These services range from first aid to complete coverage for hospitalization and surgery. The number of such complete programs is limited and the need is great for extending the service to other regions.

Education.—Mexico has a number of vocational schools of agriculture organized under the Ministry of Education. These began in 1927 and have continued since that time. In 1942, 17 such schools were located in 15 different states. Emphasis is on practical agriculture. To this end the curriculum is so arranged that practice is given in the actual planting of and caring for crops and in the raising of livestock. Some emphasis is given to vocational training in rural industries. The schools have a 3-year program. Students are supported by means of federal scholarships. Preference is given to sons of peasant families.

Y. M. C. A. rural reconstruction center.—The Young Men's Christian Association rural reconstruction center at Camohmila is a long-term demonstration project for the purpose of teaching rural inhabitants improved techniques of farming and living. It is located about 55 miles south of Mexico City, where there appears to be great need for extension work. The center includes a plot of farm land and buildings which together form the basis of the demonstration center for rural people in the area. It stresses improvement of the soil and crops, livestock, and poultry, and development of household industries, improvements in home construction and arrangement, diets and food preservation, and health and sanitation. It attempts to make a frontal attack on all rural problems of the area. The center is strategically located, so that the inhabitants from 11 villages in 2 valleys must pass it in order to reach the larger village market at Tepoztlan. The philosophy of its operators is that change must be gradual, and demonstration is the most effective way to induce more efficient procedures and techniques. It is hoped that improved techniques will radiate from this center to wider areas. There is some evidence that these techniques are being copied by neighboring villagers.

The Rockefeller Foundation.—In cooperation with the Ministry of Agriculture and the Department of Public Health, the Rockefeller Foundation is doing important extension work in programs for improved seed selection, diversification of crops, and health.

The ejido organization seems to offer an important avenue for the development of future extension work in Mexico. Officers of the ejido are elected by the members and are subject to the will of the majority. Each ejido has a plot of land assigned for the use of the rural school (parcela escolar). This land could become an effective demonstration plot not only for the school, but for the entire ejido community if it were properly supervised and directed. In many rural communities the rural school not only serves as a place in which to give instruction to children but also as a community center. Frequently the school building is used at night for conducting classes for adults. The custom of Mexicans to live in villages would seem to facilitate the development of extension programs, since calling groups of different ages together on short notice would be relatively easy. Anyone contemplating extension work in Mexico should give thorough consideration to the possibilities offered by the ejido organization.

Orientation to the culture

People doing extension work in Mexico should remember that the rural population is not homogeneous as is generally true in the United States and in many countries of western Europe. The Mexican census of 1940 had to be taken in 50 different languages. According to that census, a significant portion of the population of Mexico living in localities of 10,000 inhabitants or less spoke only Indian languages. This means that not only are rural communities isolated, but the people of those communities often differ in their language, customs, and traditions. This is because Mexico was rather densely populated by diverse Indian groups when the Europeans conquered the country. The Spanish institutions and culture were merely superimposed on the Indian base. Many of the Indian customs, traditions, and techniques of living have been preserved to the present. The Mexican peasant often is not aware that more efficient techniques of farming and living exist. If he does know about the new ways, he must still be convinced that they are superior to the old. Blanket extension programs patterned after the Extension Service in the United States, therefore, would probably not be effective. Extension programs and techniques must be adapted to local situations. Rural Mexicans are guided by the customs, attitudes, and techniques that have been handed down from one generation to another over a long period of time. These should be studied and understood before introduction of sudden changes is tried.

Puerto Rico

Rural-life problems

The major farm and farm-home problems of Puerto Rico are:

Excessive population (623 persons to the square mile).
Poor health and low nutritional standards.
Low educational level of rural families.
Poor distribution of land.

Soil erosion and poor land use.
Low production per unit of land.
Inadequate marketing facilities.

Some of these problems have been approached directly through a sound extension program, but some have not. Extension can be of great help in handling problems related to health, nutrition, soil erosion, production, and marketing. However, very little can be done by extension in solving problems such as excessive population or poor distribution of land.

The Island has great need for education in solving its health and nutrition problems. Tuberculosis, diarrhea, enteritis in children, and uncinariasis are common ailments. Little attention has been given to the proper care of milk and water for human consumption. Many rural families have poor sanitary facilities, and even the use of latrines, the cleaning of surroundings, and the sterilization of utensils and clothes are not emphasized. The susceptibility to illness of all sorts is great, because the nutritional standard is low.

The average person consumes approximately 1,035 pounds of food yearly instead of 1,669 pounds, which is the minimum requirement for good nutrition. Not only is food consumption low, but food is of poor quality. A high percentage of the population has the bare essentials with which to maintain a living and is undernourished and underdeveloped. This is caused mostly by the low economic condition of the average-size family, which is large. Little land is available. It takes 2½ acres of productive land for the minimum requirement for a balanced diet for each person. In Puerto Rico, the average is 1 acre of land per person, of which one-half is productive and the other one-half unproductive.

Present practices

The Agricultural Extension Service of Puerto Rico is part of the Agricultural Extension Service of the United States Department of Agriculture. Cooperative extension work was organized in Puerto Rico during the year 1934-35. The system used there is similar to the one used in the United States, but methods have been adapted to fit the different conditions. Because of the stage of development that extension work has reached and of other factors, such as the similarity of conditions and the language spoken there, Puerto Rico has participated actively in the training of persons from other countries. The cooperative Extension Service of Puerto Rico was honored recently with an award for superior service.

Actually, out of 77 municipalities, 54 have local extension offices. In addition to agricultural and home demonstration agents, some of these local offices have special agents in cooperative marketing and in consumer education. Recently, three training centers for incoming personnel were established. The Island is divided into four supervisory zones. At the central office a staff of subject-matter specialists help extension agents in the execution of the plans prepared for each municipality and in training local leaders (adult and 4-H).

Plans of work are prepared, after problems and recommendations have been presented to the extension agents by a planning committee composed of local leaders. Farmers, housewives, and 4–H Club members are represented on this committee, and each group presents and discusses the problems that affect it directly.

Concern for change

Several basic social institutions have demonstrated great interest in solving the problems related to the poor health and nutrition of the Island. Some of them are:

Insular Department of Health
Insular Department of Education
Agricultural Extension Service
Farmers Home Administration
University of Puerto Rico
Sewage and water authority
Experiment stations

All these agencies have participated in one way or another in the programs organized to solve the problems. Some agencies do research and some do educational work; others do the remainder of the work. Frequent meetings have been held to coordinate the programs and determine the participation of each agency. The specific activities that are being carried on by the different groups are illustrated by the following example:

The School of Tropical Medicine of the University of Puerto Rico has done the research work on Bilharhziasis. The extension service did the educational job throughout the Island in cooperation with the Insular Department of Health.

For the last 8 or 10 years, concerted efforts have been made to solve problems of health and nutrition. Although a great advance has been made, the problems are still so big that the extension service is expected to have to continue directing its efforts in the same way for many years to come.

Nutrition committees have been organized throughout the Island, with the help of the extension nutrition specialists and agents. Many of the methods used have been combined in trying to solve problems of health and nutrition. Some of these are: Method demonstrations, result demonstrations, conferences, leader-training meetings, tours, posters, leaflets, radio programs, press releases, clinics, first-aid courses, moving pictures, and farm and home visits.

Extension approaches

Experience has shown that extension programs in Puerto Rico should be directed as to approach but problems should be solved through group action. This way may be slow, but it is the surest. Many programs have failed because of limited participation in the group most directly affected. It is recognized that before having group action working smoothly, extension agents have to create a favorable sentiment among rural families. When these families are convinced that agents are not tax collectors, investigators, or the like, and are working for the benefit of the community, regardless of race, religion, or political affiliation, the time is ripe to start training local leaders and to organize groups (adult and 4-H) to solve the people's problems through their own efforts. This should be accomplished through the guidance of the extension service and other related agencies. Amazing results have been achieved in Puerto Rico with respect to changes in attitudes, although it is recognized that more than half of the journey is yet to be made.

4–H Club work has proved to be essential in helping to decrease substantially the number of problems that future generations will encounter. No nation's agricultural program is complete without rural youth-development activities.

Argentina

Rural-life problems

The major farm, home, and other rural community problems of Argentina are:

Getting scientific knowledge relating to the farm and home to people who do the actual operating.

Creating a desire on the part of farm people for such service.

Carrying extension services to all geographic areas and all levels of farm people.

Present practices

Regional agronomists are now functioning under a system, but there are no home economists. Agronomists are few in number and have many inspection duties. They have few farm-organized groups with which to work. Many of them do not have practical farm knowledge and spend a minor part of their time getting in touch with farmers who actually operate farms.

The obstacles to improvement are that—

The voluntary organization of farm groups is not common, probably because schools, churches, and other local institutions are not operated by local governments.

There is a difference between the theory of agricultural education and the way agriculture is practiced.

Funds appropriated for extension work and personnel assigned to it are inadequate.

Concern for change

No great concern for change exists among farm people because they are unaware of the need for services and the availability of these services.

1. Individuals here and there, probably a great number of them, say that they would like to know this, that, or the other thing, but seem not to be aware that they can obtain assistance, or because they would have to do so through the mail, do not call for it. Furthermore, these persons do not feel that they are on common ground with their regional agronomists, and do not approach such experts easily.

2. People are not aware that such concern is not expressed in an organized way, but would be so expressed if professional people visited farmers and talked with them easily and openly.

Real achievement has been accomplished in the cotton belt, where (a) regional agronomists or cotton specialists are available in greater numbers than elsewhere; (b) actual studies have been made on cotton farms; (c) European peasant-type settlers do not have pronounced inhibitions about asking for service; and (d) cooperatives are prevalent.

Groups of farmers are organized in producers' cooperatives in the cotton belt. The farmers' federation (Federacion Agraria Argentina) also has locally organized groups, but such groups are locals of its own organization rather than of an extension organization. Other farmers' organizations function in somewhat similar fashion. None of them makes great demands upon the technical assistance that is available.

Extension approaches

Extension work in the cotton belt is rather outstanding. It has been operating since 1924, and by 1947, under the cotton board, was doing notable work according to typical extension methods. These methods are successful, first, because of the vigorous promotion of the work, and, second, because local cotton agents operate fairly closely with experiment stations located in the belt.

Extension work could be greatly expanded if it utilized the local schools and organized farm men and women into local extension groups. Probably its outstanding approach could be through organizations somewhat like the 4–H Clubs of the United States. It could also be greatly expanded by offering individual home economics services to farm women.

The extension educational job is done through regional agronomists whose characteristics and practices have been described, and through publications, most of them experiment-station bulletins which, at present, are not written in a style that appeals to the average reader.

Orientation to the culture

The specific outstanding things in the culture and the mores of Argentina that must be understood before the problems to approach and the methods to be used are decided upon, are that—

1. Higher education in which agricultural scientists and experts are trained is openly and avowedly theoretical, and these scientists are not accustomed to dealing face to face and easily with practical farmers.
2. The inhibitions or blocks are cultural and psychological and rest upon the class structure, that is, the prestige and status of the educated man on the one side and the manual worker (farmer) on the other.
3. The Estanciero, the great livestock producer, has been well enough educated himself and is substantial enough financially to have taken care of his own scientific and technical problems and paid for them personally. He is not inclined, therefore, to call upon extension specialists. This, again, is rooted in the long-standing class structure of the country.

Bolivia

Rural-life problems

The major farm, farm-home, and rural-community problems of Bolivia are:

Need for farm programs.—At present Bolivia is mainly concerned with the problem of producing enough farm products to feed its people, instead of having to spend around 50 percent of its annual foreign exchange to import agricultural produce that could easily be grown locally.

The factors responsible for the situation are numerous, some being complicated and difficult to solve and requiring long-time programs, and others being simple and short-termed.

Following are some of the most important short-term factors that could be improved by simple, inexpensive, educational extension programs that would bring about immediate results with a minimum of effort. The means to work with would also have to be available. This is the number-one limiting factor in the country.

1. Introduction and adaptation of better and more up-to-date recommended farm practices, through an extensive educational program (visual aids, demonstrations, and other techniques), particularly among the small landowners, who are mostly illiterate Indians.

2. Introduction by the agricultural experiment stations of better seeds that are disease-resistant, early producers, heavy yielders, and frost-resistant, in an effort to increase yields and quality of needed farm products. A program of introduction and distribution should be started by the extension service as soon as such seeds are released.

3. An educational program on the care and management of livestock, in an effort to help solve or improve the various livestock problems that are responsible for the country's meat shortage; method demonstrations on the control of livestock diseases and parasites; and feeding and improvement of native livestock through individual selection and culling.

4. Importation of purebred or good animals from other countries for introduction by the agricultural experiment stations, followed by a well-controlled distribution program operated by the extension service.

5. Crop-disease and insect-control programs that would include method and result demonstrations, visual and written information, and press and radio information.

6. Educational extension programs on soil-improvement practices; demonstrations on the value of fertilizers and soil fertility, soil conservation in the irrigated areas, water conservation in the dry farming areas, and terracing and contour farming.

Need for an educational home program:

1. On simple, everyday hygiene in the home to include visual and written information on the subject, prepared in cooperation with the health department and educational, religious, and other institutions.

2. On simple, everyday home cookery and household arts; the use of certain foods, their preparation, storage, and nutritional values. This should be conducted in cooperation with health and educational agencies.

3. On the value of home gardens, as a means of supplementing the deficient daily diets of rural people. This is of primary importance, especially among the peons or very small landowners, who have a tremendous death rate as a result of deficient diets.

4. Among the large land or *Finca* owners, to see what can be done toward helping to improve the housing problems of the peons through programs for mutual help and cooperation.

Other problems:

1. Lack of transportation facilities from producing to consuming centers. Extension can do very little about this.

2. High cost of transporting farm products, which often is higher than the cost of the product itself.

3. Lack of accessible technical help for farmers with their various agricultural problems. This could easily be solved by using extension agents in the various agricultural areas.

4. Lack of medical facilities and hospital services in rural areas.

5. Lack of primary educational facilities in rural areas, especially for the lower classes.

6. Poor distribution of rural people because of lack of transportation facilities and roads, and various other factors, as most of Bolivia's better farm lands are still undeveloped and untouched. A program for colonization with government assistance and supervision would help a great deal.

Present practices

Bolivia, gifted with most of the necessary elements that are ideal for all types of agriculture, could be one of the leading agricultural countries in South America. However, the country spends around 50 percent of its total foreign exchange to import food and other products of an agricultural nature that could be grown in the country.

To improve the situation, numerous factors have to be considered, starting with those about which very little can be done, such as finances, and ending with those dealing with the small individual farmers, in which extension workers can help a great deal and, as a result, improve the country's agricultural situation in general.

Many of the agricultural practices still being used by the rural people are primitive and impractical, because no one has ever shown or proved to the people that better methods exist.

The major obstacles to improvement are lack of trained personnel, few resources, and the lack of local agricultural experiments, the results of which are needed to work with.

Most of the present native seeds used need a great deal of improvement. Livestock needs improvement as well. This situation could be remedied by establishing local agricultural research stations that would work in cooperation with the extension service to distribute seed and recommend results to the farmers.

A large percentage of the present problems relating to the rural home exist because of the low educational level of the masses rather than anything else; poverty has a little to do with them, however. The large majority of the rural people would live better if there were only someone to demonstrate to them the numerous advantages of better home practices.

The lack of transportation facilities to new, large, and underdeveloped agricultural areas of the country is a factor perhaps responsible for the agricultural situation in Bolivia today.

Because Bolivia, up to now, has been a mining country, most of its people, even farmers, have settled close to the mining centers, where they have tried for centuries to farm submarginal lands and have left untouched the better farm lands, situated usually where there are no minerals.

As the supply of minerals becomes exhausted and the country turns more to agriculture, people are being forced to settle and develop these new areas. However, lack of transportation facilities and government help and encouragement prevents the people from engaging in agriculture on a large scale.

At present three railroads and a paved highway are under construction. These lead to the largest and most important underdeveloped agricultural area of the country, the Santa Cruz area situated in the eastern part. The project, however, will take at least 10 years to complete.

Social institutions upon which to base further development

Further development and improvement can be brought about by a coordinated effort on the part of all public agencies especially, with the cooperation of private and semiprivate institutions.

A well coordinated and planned campaign of the three main programs now in existence—agricultural, educational, and health—could do a great deal toward remedying, or at least improving, the basic social problems as well as the agricultural problems of the nation by coordinating the work of all the programs being carried out by the government.

Extension approaches

An extension program is being carried on in the Cochabamba area in connection with the agricultural-station program carried on by the United States Department of Agriculture and the Government of Bolivia. This program was started less than 2 years ago and has been organized on a project basis to work on some of the important problems in the area such as those relating to fruits and vegetables, livestock production and forage crops, grain crops and soils, and a program for rural-youth groups.

The work at the agricultural stations on crop and livestock production practices is the basis for the subject-matter information used in the educational and demonstrational work among the rural people of the area.

Successful extension work depends upon people's actually putting into use improved methods in farm and home practices. This requires a long educational process of creating in the people a desire for self-improvement. However, an approach is being made through the training of national technicians in extension methods, the development of local rural leaders, and, particularly, the work with rural youth.

Orientation to the culture

In most of the Latin countries and especially in Bolivia, because of her natural topographic divisions, a great deal of regionalism exists in the various sections. Therefore, any program, especially if conducted on a national basis, has to take at least three main topographic divisions into consideration: The high plains, the valleys, and the tropical area in the eastern part of the country.

The educational level of the majority of small farm owners and farm laborers is low. They have customs and traditions that are generations old. Only by perseverance and patience can their attitude be understood. This understanding is necessary if a desire is to be created in them for self-improvement through the solution of a few of their farm and home problems. In addition, the geography of the country and the lack of transportation add to Bolivia's problems.

Brazil

Brazil alone is as large, as populous, and probably almost as complex as all the other countries of South America together. Though the nation is a federation of States, there is hardly anything, with the exception of the national language and allegiance to the constitution and the flag, that the inhabitants of a State such as Amazonas or Pará in the north have in common with those of São Paulo or Rio Grande do Sul in the south. For this reason it is particularly hard to generalize about problems and services; neither the difficulties nor the measures taken to cope with them, in the Amazon Basin, for example, bear much resemblance to those in the Temperate Zone in the south.

Brazil as a whole, or extensive parts of it, is beset by a large number of serious farm, home, and other rural-life problems, any one of which could legitimately be classified as major. Some of these, though not necessarily the most important ones, may be ameliorated through extension activities, but others will require far more than the educational approach of extension agencies if they are to be corrected. Therefore, in listing the basic problems we place them in two categories:

1. Serious problems, not particularly amenable to the extension approach, such as:

a. Lack of facilities for communication and transportation. (Poor roads or none at all; dependence upon the oxcart, pack animals, canoes, and, especially, the heads and backs of human beings.)

b. The low educational status of the population. (Widespread illiteracy, and lack of schools and communication media such as the printed page.)

c. Concentration of land ownership and control. (The fazenda system, in which a small number of people own and control vast tracts of land, while the great mass of the population is relegated to the position of landless agricultural worker. Notable exceptions to this rule are the hundreds of thousands of owners of small farms in central and south Brazil. There farms are generally too small to be economic units, are extremely infertile, and are cultivated without benefit of fertilizer or intelligent crop rotation.)

d. Inadequate and indefinite land surveys and faulty land titles.

e. Insufficient funds to provide schools, roads, and health services. This is especially true where the taxable resources are so limited that funds are not available except through federal or state appropriations. In a few instances this lack is offset partially by the organization of local cooperative efforts, but they are insignificant in relation to the total need.

2. Serious problems, in the solution of which extension activities could be of tremendous assistance:

a. The widespread persistence of primitive methods of agriculture.
b. Poor health.
c. Inadequate diets.
d. Lack of sanitation.
e. Poor housing.
f. Lack of chemical fertilizers and knowledge of their use.
g. Serious soil-erosion problems.
h. Devastation of the forests. (This is in part the result of reliance upon wood to fire the locomotives on the railways and the use of charcoal for cooking purposes.

The three problems selected for analysis are: (1) The persistence of primitive methods of agriculture; (2) the inadequate supply and distribution of improved varieties of seed; and (3) the preoccupation with over-all plans on the part of the agricultural leaders.

Persistence in the use of primitive agricultural methods

Many of Brazil's rural people still do not utilize the agricultural tools and techniques developed by western civilization. Instead, they wrest their living from the soil by primitive systems of agriculture. For example, in northeast Brazil, in order to grow a little manioc, a handful of beans, or a peck of corn, the countryman selects a small tract of virgin forest or of rank and well-developed second growth. He then fells an acre or two of this during the dry season, and just before the onset of the rainy season, fires the entire lot. After the first light rains, he deposits the seeds in little holes scraped out with a digging stick, and around the plot erects a barrier or fence of trunks and branches left over from the burning. While the plants are growing, he cuts out the most rank of the shoots and suckers. Finally, he harvests the crop. When the next crop season arrives, the same process is repeated on a different tract of land, for the soil of the previous tract is generally exhausted with the one crop.

The system of fire agriculture or forest rotation as a source of nitrogen, though extremely wasteful of human labor, has been one of economic necessity for centuries. It results in very low production and low income per worker, and fails completely to take advantage of the simplest agricultural implements that have been developed.

In some parts of Brazil, notably throughout the Amazon Basin and in the northeast, the system is even more rudimentary. The countryman merely waits until the river is receding and then, with the ball of his foot, presses the seeds he wishes to plant into the moist, spongy soil of this flood plain. In the northeast, where the streams dry up entirely, the stream bed also is planted in this manner. In each instance, the crop receives little or no attention until the harvest.

In the major producing regions of central and south Brazil, the hand planter and one-mule plow are much in evidence. It is from these areas, and to some extent from the marginal regions previously described, that Brazil obtains most of its foodstuffs. Therefore, economic changes, notably the increased price of food, make a change in methods feasible and the use of higher yielding strains of plants highly desirable. In general, the producer is not aware of the advantages of these improvements and he must be shown if changes are to be made.

Inadequate supply and distribution of improved varieties of seed

At present, most seed and planting stocks are produced on the farm with little thought for selection or improvement. Storage facilities generally are inadequate, and, as a result, seed frequently is badly damaged by insects and often of extremely low germination. When seed is shipped in from other areas, little attention is given to obtaining adapted seed free of diseases.

In general, lack of knowledge among producers as to what constitutes good seed, poor storage, and inadequate transportation facilities is an important problem for most of the rural areas. One other factor that should be taken into consideration is that of climatic conditions. Brazil has extreme variations in weather; in the far north, there is heavy rainfall a large part of the year, while in other areas it may be so little as to cause semiarid conditions.

Most of the leading trained agriculturists, large farm owners, and agricultural institutions appreciate the value of good seed, and are continually on the lookout for sources of better seed stock. The Secão Fomento Agricola, of the National Ministry of Agriculture, is aware of the need for high quality, adapted seed, free from diseases. On its demonstration farms it practices seed selection, seed treatment, proper storage, and seed testing.

In 1943 or 1944, quantities of vegetable seeds were imported from the United States and tried out on a large scale, especially in northeastern Brazil. These seeds were planted on demonstration farms and on many private farms. The demonstration farms then selected and produced large quantities of improved seed and plants that were distributed to farmers at a nominal price. This distribution has been successful as far as it has gone, but because of the shortage of trained personnel and of insufficient funds, the work has not progressed as rapidly as it should. A better trained personnel in extension techniques and methods, imbued with the desire to be of service, could make a great contribution to Brazil, particularly in this field.

São Paulo is one of the few states that have the nucleus of an extension organization that might be expanded to render more satisfactory service. In this State, literature on agricultural topics is prepared and distributed, and trained agriculturists are servicing the producer.

The Federal Secão Fomento Agricola has offices and demonstration farms in each State. There is also the state office of the secretary of agriculture, which has demonstration farms. In addition to the organizations mentioned, there are other state and federal offices doing agricultural, forestry, or irrigation work, but with little coordination between the state and federal offices. Closer cooperation between the state and federal agricultural organizations is necessary to prevent duplication of effort and to win the confidence and support of farm people.

Agricultural leaders' preoccupation with over-all plans

The fazenda system and inherent feudal attitude must be understood and extension methods especially adapted to assure change and improvement. Public officeholders in Brazil, which include the extension workers, have a point of view different from that of workers in the United States, and undoubtedly their effectiveness is limited because of this. Moreover, it is felt that Brazil's agricultural leaders often are so preoccupied with curing all the Nation's rural ills with one fell stroke, that they do not have time to attack any specific rural problem in the most helpful manner. It has been said that this is a frustration caused by the enormity of the agricultural problem and the lack of trained personnel and of funds to carry a program to successful conclusion.

Agricultural research in Brazil leaves much to be desired, but it is farther along than extension. As a result, a great gap exists between research findings and farm application. Demonstration work at the farm level is needed if the results of these demonstrations are to be adopted by the farm.

Chile

Rural-life problems

The major farm, farm-home, and other rural-life problems of Chile vary in type and degree among the various social classes represented in the population. Although no adequate statistics are available, average figures provided by leaders in Chile indicate that from 1 to 2 percent of the population is wealthy, 15 to 20 percent is included in the middle class, and the remainder represents the very poor.

This discussion will deal primarily with the people living on farms who belong to the very poor class. Except for a few wealthy landowners, practically all of those on farms are in this group. The following are among the major problems of the very poor class:

Infant mortality.
Malnutrition.
Hygiene and health.
Inadequate and insanitary housing.
Insufficient clothing.
Inadequate marketing facilities and distribution of farm products.
Individual effort to the exclusion of group cooperation.
Antiquated farm methods in certain areas.

Obstacles to progress

Infant mortality.—In Chile, infant mortality is among the highest in the world. In 1944, 18.1 percent of the babies born alive died before they were 1 year of age. This is largely the result of ignorance and poverty on the part of the people concerned.

The chief obstacle to improvement is, that rural people at present do not have adequate sources of information on maternity care or sufficient energy and health to use desirable practices if they were known.

Malnutrition.—Malnutrition also is particularly acute. Many children in Chile die not only from lack of adequate food but purely from hunger. The qualitative and quantitative deficit in diet is among the greatest in all America. Milk consumption, for example, is less than one-fourth of the minimum needed. Seventy-five percent of the children who have escaped death and succeeded in reaching school age are victims of malnutrition.

The same general causes of malnutrition and obstacles to improvement are responsible for the high infant mortality.

Individual effort to the exclusion of group cooperation.—The fact that group cooperation is practically unknown creates a pronounced problem also.

This situation exists because individuals have not experienced the benefits of group cooperation and so do not realize what these benefits would mean.

Obstacles to improvement are lack of communication and transportation, and the ignorance of the very poor.

Antiquated farm methods in certain areas.—In certain areas, such as parts of the coast, the methods in use have been employed by many preceding generations. These methods continue to be used because, to date, people have nothing to substitute for them. The areas concerned lack communication with the best sources of information in the country.

Concern for change

The social institution upon which to base change for any of the four problems discussed is the central Government, through such agencies as the Ministry of Education, Ministry of Agriculture, and Ministry of Health and Sanitation.

In Chile, in contrast to most other South American countries, the State and church are separate. However, cooperation of the church would be desirable.

The middle class, composed of teachers, doctors, government workers, and the like, is the group most concerned over change. The leaders from this group know that if the people are to enjoy good schools, good sanitary conditions, and business prosperity, the level of living of the low-income group must be substantially improved. These leaders further realize that more realistic education at all levels and with all groups is necessary if Chile is to achieve the goal of having a relatively large proportion of middle-class persons in contrast to its present large low-income group.

In general, the rich have what they consider a good life without change. Therefore the majority of the rich are not concerned with the problems of the poor. Fortunately there are some exceptions. The poor are too hungry, too ridden by disease, and too ignorant to take initiative.

The middle class almost exclusively is responsible for government functions. As one example of success, the Obligatory Social Insurance Bureau, under the Secretary of Health and Sanitation, has, during recent years, attained a relatively low index figure on infant mortality for the children submitted to its control. This figure is 4.4 percent as compared with 19.1 percent for the country as a whole.

Extension approaches

Infant mortality.—The following are now being used in the work to lower infant mortality:

Medical and dental attention.
Services of visiting nurses.

Parent centers.

Treatment of mothers and children who have infectious diseases.

Immunizing children against the most common and dangerous infectious and contagious diseases.

Distribution of food and other products to pregnant mothers.

Attention given to mothers during confinement.

Subsidies for nursing mothers.

Preventoriums, sanatoriums, and vacation camps.

These aids have been put into effect in the last two decades. Unfortunately, not all organizations deal with the task in hand in a sufficiently adequate manner, as their regulations often are limited in character, demand certain requisites as to wages and age, or are restricted to limited aspects of the problem.

Integration of effort and extension of the work of the group previously described should contribute to the results hoped for.

The central Government through specialized agencies, assisted by certain institutions of a private and religious character, are responsible for the extension and education job.

Malnutrition.—Relatively little work is being done on malnutrition as compared with that done to lower infant mortality. As one example, free breakfasts are given to school children, but probably less than half the children of school age are included. Change must come directly through the large landowners, and this complicates the problem.

Some of the approaches to the problem now in use in cities, if carried to the farms would improve the situation. In the cities, restaurants for the poor serve food at reduced prices. Low-priced milk is also available to the poor. Staple foods are bought and sold cooperatively in centers where basic education is given to mothers and children.

Agencies of the Central Government, under the direction of the secretary of agriculture and the minister of education as well as of various private and church organizations, are responsible for the development and direction of agricultural extension and education in general.

Individual effort to the exclusion of group cooperation.—During the last 6 or 7 years, farmers' cooperatives have been organized on a small scale for the purpose of buying and selling farm products, and of giving liberal government credit to purchase machinery, fertilizers, and seeds. Many of these cooperatives have been very successful in different areas. They have fully realized that they can eliminate the middleman, who usually makes the profit in selling farm products. For example, one of the cooperatives bought a tractor and other equipment for the use of its members and had a central market in town for vegetables.

More emphasis is needed on cooperatives to assist the very poor on farms through liberal credits and other direct assistance.

Extension campaigns to teach the benefits of cooperation need to be promoted. Meetings might be held in the rural areas in which local leaders from the same social level would lead the way in studying problems. 4–H programs in local rural schools might be a desirable approach.

The Ministry of Agriculture through its Extension Service and Farm Credit Bureau is chiefly responsible for the extension and education job.

Antiquated farm methods.—In the past 10 years, "brigades on wheels" have been used to some extent in teaching minor farm activities such as poultry, bee-raising, gardening, and handicraft. Printed material adapted to the reading level of the people has been provided in many instances.

These methods have proved successful in raising the farmer's income, and the rural people are greatly interested in more approaches of this kind.

An extension of the present program would be desirable to include greater numbers of local leaders in extension programs, 4–H meetings, demonstrations, and entertainments, and provide these leaders with bulletins.

The Farm Economy Institute, cooperating with the Secretary of Agriculture, is responsible for this particular education and extension job.

Orientation to the culture

The attitude of the poorer people toward the Catholic Church and the relationship of the church to the state should be thoroughly understood before a decision is made as to what problems to approach and the methods to use. The poorer people are so loyal to the church that probably no other group, except the state, would have the prestige to make major changes successfully.

Even the state would need to consider in its approach, an understanding of the customs of the country, such as closeness of family ties, class consciousness, the work pattern of the people, pride in culture and education, custom of not inviting guests into the home until they have been thoroughly accepted, and attitude toward manual labor.

Colombia

The geography, the people, and some general observations

To understand the agricultural problems of Colombia, it is necessary to know something of the geography and topography of the country. The country is one and one-half times the size of Texas and is located in the north of South America. It is the only country in South America touching two oceans. It is crossed by the equator. The western third of the country is covered by three ranges of the Andes, and three-fourths of its 10½ million people live in this area. The climate varies with altitude from steaming jungles to permanently frozen mountaintops. Because of the tremendous difficulty of building roads, many areas are isolated except for air travel. Within and between some areas, road systems and railroads are rather well developed, although many towns are reached only by trails.

The variety of climate causes great differences in the types of agriculture and the products produced. In the higher altitudes, many Temperate Zone crops such as small grains, potatoes, and cabbage are grown. Here corn requires 10 or 11 months to mature because of the short days in the tropics and the cool climate. In middle altitudes, semitropical crops such as citrus fruits and coffee, are produced. In the low tropical areas, rice, coco, bananas, and other tropical crops are grown. Sugarcane is grown except in the colder areas. Two crops of corn are grown annually in the middle and low areas.

The country was settled by the Spanish, who were given great tracts of land. In some sections of the country much of the land is owned by a few people.

The people of Colombia include whites, Indians, Negroes, and mixtures of these races. Approximately 30 percent are white and of Spanish origin, 45 percent are Indian, and 25 percent are Negroes and mulattoes. The white people are found chiefly in the larger cities, the Indians in the cooler climates (high lands), and the Negroes in the hot climates and on the coast.

Taken as a whole, Colombia has a sparse population, 24 persons to the square mile, as compared with the United States with 43 to the square mile. Since 97 percent of the people live in 40 percent of the country, the inhabited section really has over 58 people to the square mile. Seventy-one percent of the people are rural if we consider all people living in towns of 1,500 or less as rural.

Colombia presents many problems with which the person going there to work should be familiar, but which cannot be solved by extension programs. Much of the land is held in large tracts and is not used effectively but is held for investment purposes. Since the land tax is small, there is not the incentive to cultivate or use the land efficiently. Partly because of the large land holdings, many of the other farms are too small to furnish a livelihood, and so the small operators work outside to augment their income. Generally speaking, the family-size farm common in most of the United States does not exist.

Most of the farm problems said to exist in other South American countries also exist in Colombia. Some of the most serious problems of Colombia can be solved only by changes in customs, social organization, and laws that cannot be brought about by extension directly. But indirectly, whatever contributes to knowledge and better understanding by the majority of people should help to bring about constructive changes. Many of the problems, such as inadequate housing, insufficient food, and even unwise use of land are the result of the social system and the type of land ownership. The customs and social organization will have to be changed fundamentally to eliminate some of the present difficulties.

However, by attacking many problems directly, the extension worker can definitely establish himself and get better acquainted with the people. In this discussion, livestock problems might be used as the basis for an extension program. It is hoped that by working on these specific problems, programs may be developed that will reach more people in ways that will help to bring about constructive change.

Farm problems include those resulting from soil erosion; inadequate crops and seeds; use of primitive tools, inefficient livestock—dairy, beef, hogs, sheep, horses, and poultry; inadequate year-round feed supplies; diseases and parasites; improper care and management of milk cows and dairy products; inadequate use of horse, mule, and ox power because of primitive harness, carts, plows, harrows, and cultivators.

Present practices

1. A common practice is to plant corn and other crops on steep hillsides that have been cleared (burned). Little attempt is made to control erosion except on coffee farms, where definite efforts are made to maintain a heavy ground cover and shade the coffee trees with large, leguminous trees.
2. Though many good food crops are now available, the amount of improved varieties for general distribution is limited. The experiment stations are working on improved grain and fruit crops. Seeds and plants are distributed at small cost.
3. In some areas cultivated, the hoe and the machete are all that can be used, but on many small farms light horse-drawn plows, harrows, and cultivators might be used. On some farms such equipment could replace the ox and ancient type of wooden plow.
4. Most of the cattle are of native breeds, Spanish longhorn and Blanco Orejinegro which, though they have many good qualities, have not been selected for high production and the early maturity necessary for efficient production. Some improved breeds of livestock have been introduced that are well adapted, good producers, and cross well with native breeds.
5. Many of the livestock seem to be in good condition part of the year, but generally sufficient feed is not available the year round to keep animals in efficient production. This problem will be accentuated as new breeds and improved grade animals are developed. Already many good grasses and forage plants have been introduced, but there is a possibility of obtaining others, especially native legumes that might be propagated.
6. Disease and parasites are serious. Anthrax, hog cholera, and other diseases are rather well controlled in some areas by vaccination.

The cattle tick, with the infections it carries, is probably the most serious menace to the cattle industry. Much has been done by the national Government to build and encourage the building of dipping vats to control the tick, but only a beginning has been made. There is also a tendency to feel that elimination of this pest is impossible.

The torsolo fly (known in the United States as the human botfly) is another real menace, but this and other flies may be reduced or controlled by the newer insecticides. A few herds composed of purebred and grade cattle, owned by wealthy breeders, are milked twice a day and handled as dairy cattle are handled in countries where dairying is well developed. However, most of the native cattle are milked once a day or at unequal intervals. Generally, milk is not handled in a sanitary manner, and even pasteurized milk needs to be boiled for real safety.

The land is largely tilled with an ancient type of wooden plow drawn by oxen. Though this may be adapted to some areas, small steel plows drawn by oxen, horses, or mules would be more effective in others and would reduce labor. Many of the horses are small and poorly harnessed for effective work, and the wagons are too heavy for the work done. Lighter, easier running wagons would make possible the landing of larger loads and thus reduce labor.

Concern for change

Colombia has a rather well-developed system of experiment and demonstration stations and an extension system that operates in several States. Two agricultural colleges connected with the national university, are training men in agriculture and do some extension work. The National Federation of Coffee Growers is doing some research and extension work among its members. Livestock associations, milk producers' groups, and other cooperatives are interested in agricultural improvement.

Considerable interest is expressed in agricultural and livestock improvement by large operators of farms and people in other businesses not directly connected with agriculture.

The smaller operator is not yet concerned with agricultural improvement, in fact he may feel that organizations for improvement are not for his use. This problem needs careful consideration, especially by the Extension Service of Colombia.

Progress has been made by the National Federation of Coffee Growers in research and in teaching its members how to use cover crops and leguminous shade trees to maintain soil fertility and produce high quality coffee.

The several breed associations are encouraging the importation of improved livestock and spreading this blood over the country. Probably the greatest improvement in the introduction of improved breeds has come through the use of good improved bulls on native cows.

Already the many improved grass and forage crops brought in have increased the livestock-carrying capacity of the land.

Extension approaches

The Extension Service in Colombia has largely carried on its work in the form of campaigns to increase this or that crop. However, recently with the advice of assistants from the United States, an effort has been made to carry on a more integrated type of program.

There is a tendency to separate livestock production from agriculture, as the veterinary or animal-husbandry official group feels that livestock production is its particular province. However, work with both groups is possible. The teaching of animal industry at the colleges of agriculture is now established.

Livestock breeders are interested in attending meetings to discuss feeding and management problems and are especially interested in the results of demonstrations.

A demonstration of the value of milking at equal intervals has created much interest and caused some dairy farmers to change their practice of milking at unequal intervals. Milking time at the college at Medellin was changed from 6:30 a. m. and 12:30 p. m. to 5 a. m. and 5 p. m. This resulted in a 14-percent increase in milk.

This and other demonstrations in improved livestock-management practices can be used as extension approaches for the improvement of livestock in this country.

Orientation to the culture

One should understand many of the deep-seated attitudes of the people of Colombia.

Among other things, it is important to make Colombians realize their country's great potentialities and to encourage them to take advantage of these possibilities. The people tend to feel that the United States has superior knowledge and things.

The Criollo de Paso horse is a good example of a superior animal that Colombia produces. The unimproved breeds are rugged and good foragers, and these qualities should be explained so the people will understand that the use of other breeds for crossing gives good results because of the qualities of both parents.

Paraguay

Rural-life problems

The major farm, farm-home, and rural-community problems of Paraguay are:

Inefficient agricultural production.
Poor health conditions.
Defective diet.
Family disorganization.
Educational deficiencies at all levels.
Poor means of communication, and isolation from the outside world.
Political instability and insecurity of life and property.

Present practices

Agricultural-production problems.—Land is primitively prepared for use by felling and burning trees or bush.

Good implements are lacking. All metal is costly and imported. Paraguay is an interior country, whose imports are brought in principally through Argentine owners of transportation. Credit for the purchase of tools and other farm assistance is limited. Government funds for this purpose are small, and cost of private credit is exhorbitant. The poverty of the majority of small farmers makes them unable to guarantee official loans.

Sloping hilltop land is generally used for farming in Paraguay, for it is well drained. Bottom lands are hard. Erosion therefore exists and the fertility of the soil is lost.

Fertilizer is rarely used, although bonemeal and oilseed press cake are available. Many native farmers are ignorant of good farming practices.

Insect pests, especially leaf-cutting ants, are destructive. They are hard to eliminate without technical and economic help.

The tenure situation inhibits agricultural improvement. About two-thirds of all the farmers are classified as squatters. A confused tenure situation has existed perhaps since the great disorganization following the war of 1870. About two-thirds of all the farmers own less than 5 hectares.

Trained personnel to spread improved agricultural practices are lacking.

Health problems.—Infectious diseases, ancylostomiasis, goiter, and dental decay are prevalent in Paraguay.

Housing is poor, and many people suffer from exposure in the Paraguayan winter, so that illness and death from respiratory infections increase. Hygiene is lacking and intestinal infections are prevalent among children.

Ancylostomiasis is widely prevalent. Houses lack privies, and most rural women and children go barefoot.

Domestic water comes from shallow wells or springs and often lacks calcium and fluorides. Rain water is also used for drinking, and probably contributes to dental decay.

Medical and health services are greatly concentrated in cities, and technical knowledge is not widespread. Local, untrained practitioners resist modern medicine.

Diet.—Although the diet of Paraguay is exceptional for its high proportion of animal protein in the form of beef, calcium is greatly lacking. Cattle are numerous, but are concentrated mostly where the population is smallest. Range cows are milked, and milk yield is insufficient except in the livestock areas. There is great lack of green vegetables in the diet. The calcium deficiency may contribute to the general poor dental health. The fact that many people have lost their teeth is an indication of poor nutrition.

Concern for change

The elementary-school system reaches more families in Paraguay than does any other institution. Education is popular, and existing schools are divided into two daily sessions to enable double the number to attend. More children wish to register than can be accepted. Training in agriculture and home economics is part of the elementary-school program, but no provisions are made to carry them out to any extent. Funds and trained teachers are lacking.

Kinship groups in rural areas would be useful in extension work. Farmers traditionally cooperate in farm labor and lending tools or work animals.

The church could be used in the effort to improve agriculture, health, and living conditions. A local priest in Piribebuy, a rural center, has tried to found a school that would teach agriculture and home economics. In another rural area a church school teaching agriculture exists.

Individual teachers in rural day schools have tried to implement the school-garden program, although facilities do not exist.

Extension approaches

The national agricultural school in the past lacked adequate training, research, or extension facilities.

A new agricultural experiment station, an extension service, and a supervised farm-credit program were organized cooperatively in 1943 and 1944. In Paraguay, the Institute of Inter-American Affairs, cooperating with the Paraguayan Government, is carrying on an extension program under the designation, Servicio Tecnico Inter-Americano de Cooperacion Agricola. By means of action projects in the fields of extension in crop development, storage, cattle development, home improvement, and vital surveys, STICA in Paraguay has, for 5 years, demonstrated and offered training in the advanced techniques that must be employed to increase the nation's agricultural production and improve her level of living.

Through a supervised credit service, established in 1943 by the Paraguayan Government with the assistance of STICA, the foundation has been laid for an extension service that can bring the benefits of modern agricultural science within the range of every farmer. Similar in function to the Farmers Home Administration in the United States, supervised credit operates through the agricultural services of the Bank of Paraguay, thus combining practical education with the power of credit to enable farmers to obtain the resources necessary for farm improvement. Each participating farmer, in return for a small loan, accepts certain conditions. He agrees to plant the seed that is furnished him and to grow the crops he is advised to grow, to employ certain methods of cultivation, and to use certain pasture grasses. He carries out his part of the agreement under Paraguayan supervisors and with their assistance. These supervisors are trained by STICA, and are in frequent contact with the participating farmer. His wife, with the help of a home demonstration agent, meanwhile learns to make improvements in the home that will add to her family's comfort and health.

Home economics demonstration centers have also been established in a number of rural communities. Nutrition extension is included.

A number of rural regional hospitals and health centers have been established cooperatively since 1943 by the Paraguayan Ministry of Health and the Institute of Inter-American Affairs.

In all these services, native personnel are being trained and are doing the extension jobs.

The cooperative health program, aforementioned, functions separately and sometimes competitively in relation to the agricultural extension program. Great gains would be possible by closer integration of agricultural, home economics, and health programs.

The elementary-school system should be integrated with such a general extension service. This would strengthen the schools and widen the extension effort. Rural schools would be community centers.

Deep-seated attitudes, traditions, and social organizations

Thrift is not a strong drive among Paraguayans.

Paraguayans have self-confidence.

The position of woman is relatively strong. She takes many responsibilities, often bringing up the family alone.

The country is not extremely religious. The men say that religion is for the women. Churches are not numerous.

The population is mestizo but has two languages, the Guarani Indian and the Spanish. Most people know both languages, although some country people may know Spanish imperfectly. Guarani is the familiar, friendly, confidential language that the extension agent, school teacher, or priest must know.

Peru

The major rural-life problems of Peru may be discussed broadly as follows:

Low standards of living as related to physical needs

Peru is a deficit country with respect to vital foodstuffs such as wheat, rice, milk, certain fruits, barley, butter, and fats. Therefore, it does not provide enough of the basic foods necessary to a good diet. The variation of food deficits within the country is also marked. Thus, although Lima-Callao has a food consumption that is 73 percent of the Hot Springs standard,[8] some of the highland and jungle areas have a consumption less than 50 percent of this standard.

Undoubtedly the low level of nutrition accounts to some extent for the high consumption of alcohol (aguardiente) and coca. It is general knowledge that peons are generously supplied with the coca leaves, in lieu of sufficient food, to keep them working. On the other hand, Peru has a unique system of popular restaurants that provide free meals for the poor. In 1944, 5 million free meals were provided in addition to 6 million school lunches.

A majority of the families probably have no beds, clocks, or even eating forks. Selected studies have shown that not over a fourth of the families have toilets of any kind. Overcrowding is a problem, and the house structures are often lice infested and insanitary. The lack of any of these bare essentials means that many people use the brush or woods for defecation, sleep on the ground, and drink unboiled water. Kitchens are simply lean-to's or unattached huts with meager facilities for food preparation and handling.

Although most of the rural families make their own clothing which is warm and substantial, many families lack shoes. The coastal region has a higher standard of living than has the highland or jungle and more clothing is purchased, but quality is low. The principal causes of death in Peru are infectious and parasitic diseases. Most of these diseases lend themselves to attack by preventive public-health programs because they yield to better sanitation and hygiene. Epidemic diseases such as influenza or grippe, whooping cough, measles, and smallpox account for almost one death in five, and the endemic diseases, such as tuberculosis, malaria, typhus, dysentery, typhoid and paratyphoid, and syphilis, account for about one death in six. Pneumonia claims the lives of more people relatively than any other single disease, and diarrhea is among the first five causes of death.

Infant mortality in Peru is over 110 to every 1,000 live births compared with 40 to every 1,000 for the United States. The scarcity of medical personnel and facilities can be looked upon as one of the most pressing problems facing the country. There are about 1,400 to 1,500 medical doctors in Peru, of which 800 are located in Lima and Callao and only 650 in the various departments. In Lima there is 1 physician for each 1,000 persons, in the provinces only 1 for 7,000 to 8,000 inhabitants. If minimum standards of medical density are to be reached, there ought to be at least 7,000 physicians in the country. Besides the general lack of physicians there is poor distribution of those available, so that the coastal region with one-third the population of Peru has more thant four-fifths of all physicians. Rural areas suffer enormous deficiencies in medical care. For example, more than four-fifths of all deaths in the highland region go unattended by a physician. Although the situation is not so severe in the coastal region, even here more than one-third of the deaths are unattended. The relationship between scarcity of medical doctors on the one hand and the proportion of deaths that go unattended on the other, is obvious. The shortages of general and public-health nurses is acute, there being only 750 registered nurses in the entire country. Minimum standards of nursing personnel would require the existence of about 7,000 nurses in Peru.

---

[8] Conference of United Nations on Food and Agriculture, Hot Springs, Va., 1943.

Waste of labor due to inefficient use or to idleness, or both, results in low average real wages and insufficient food production.

Peru's national income in 1942 was estimated at from $45 to $60 per capita. Most of the population is engaged in subsistence agriculture and livestock raising. Agriculture is carried on at the primitive technical levels typified by the foot plow, mattock, and machete. The wheel as a means of transport and mechanization is nonexistent in a great deal of the country. A day's labor converted into consumption goods returns a very low level of living when measured by any standard. Daily wages of from 30 to 45 cents are the rule.

There are distinct regional differences in hacienda agriculture. In the coastal zone hacienda farming, thanks to large-scale irrigation, is relatively efficient, although it still has a long way to go in mechanization. Farm labor is freer and management is more careful. Government policy is aimed at helping agriculture on the coast, and a patronizing attitude toward labor is more pronounced. Undoubtedly the standard of living for the average laborer is higher on the coast than in the sierra. Finally, the haciendas on the coast produce crops such as cotton, sugarcane, and flax, for a world market, and farming is highly commercial. In the sierra region the tenants or sharecroppers are left pretty much to their own devices in the operation of the hacienda as long as they turn over the required share of the crop at the end of the harvest year. They have their own little plot of ground from which they subsist, and market what little surplus they have in the nearest town. Farm mechanization is slightly more advanced than on the community lands of the Indians. The problems of the sierra region are absentee landlords, lack of credit, poor communication and transportation facilities, and large holdings of land.

The most common rental system in Peru is that of payment in labor performed on the plantation. In one system the hacendado (large farm operator) requires that the laborer work an indefinite number of days on the hacienda in exchange for the land he is allowed to use for himself. Often such rental includes the obligation of carting the products to market. It may even include work as a servant for the hacendado in his town house as well as on the farm.

A second type of rental is working a specified number of days for the hacendado. The third operates as follows: A piece of land is taken by a tenant whose rental is agreed upon as 20 sols. At a daily wage of 20 centavos, the tenant can work off his rental by giving 100 days' work to the hacendado. The fourth kind of rental is simple share cropping. The tenant supplies everything except the land and then turns over half the crop. Other systems exist throughout the country but are generally modifications of the ones described here.

Inefficient distribution system

The country has only about 17,000 automobiles, 11,000 trucks, and 1,500 busses. Culture areas of two types, based upon available means of transportation, may be described. One near the ocean and extending into the sierra highlands depends upon highways and railways and, to a lesser extent, upon the sea. The other, in the interior, depends upon simple foot trails and river systems. But highways are playing the major role in tying the Republic together both politically and economically. Eight so-called penetration highways are in construction to connect the coast with the eastern hinterland over the Andes. However, only one of these arteries has pushed through the jungle to link with steam navigation on the Amazon River system, running from Lima through Huanuco and Tingo Maria to Pucallpa, a fluvial point on the upper Ucayali River. Even so, this route is impassable during approximately 6 months of the year. Farm-to-market trails and roads are needed generally.

Lack of effective communication and the existence of cleavages between social groups

Scarcely more than 40 percent of the population over 6 years old is literate. The pupil-teacher ratio is over 50 pupils to a teacher. The linguistic pattern of Peru is made complex by the survival of two important aboriginal languages, Quechua and Aymara. Probably two-thirds of the population speaks Spanish, and there is a close correlation between the proportion of the population speaking Spanish and the proportion with school instruction.

Geographically, and to some extent culturally, the country is divided into three regions. In the West, along the coast, is the dry, warm, largely desert region, with numerous fertile, irrigated valleys. In the middle is the highland Andean region, the sierra, consisting of the more or less parallel mountain ranges, with high plateaus between. The eastern zone consists of the hot, humid, densely forested jungles of the Amazon and its great tributaries.

Most of the good land of the sierra region of Peru is held in large farms (fundos or haciendas) dating back to colonial times. These large farms are operated mainly by farm workers (yanaconas or peones) most of whom are Indian or mestizo. These farm workers are considered to be an integral part of the farm unit, people and land being transferred as one. This is because each farm worker has a small parcel of land for which he pays in work on the farm. At present, when a farm is to be bought the buyer asks how many workers it has on it. On the basis of the number of men, the number of workdays that each owes, what they are able to produce annually, and the amount of livestock they possess, he determines the price he will offer. On the coast, the worker lives on the large estates or in small towns or settlements. The people generally are not satisfied with the instruction their children are receiving. One study showed about half of the families were dissatisfied with existing educational facilities and instruction. The people generally recognize the lack of automobile roads and of railroads. For example, more than 90 percent of the families interviewed in a small jungle village expressed a need for an automobile road and a railroad and thought the Government ought to build them.

Attitudes toward problems

The attack on basic problems necessarily must be broad-gaged and aggressive, and should be undertaken with the knowledge that half measures are practically worthless. What will it profit to treat hookworm or malaria and not clean up the sources of infection? We can understand this if we take two important problems for special treatment.

HEALTH

Good health in much of Peru is relatively less dependent upon therapeutic medical care as we know it in the United States than it is upon the living habits of the people. Health there is more nearly all of living itself. Therapeutic treatment skillfully and effectively applied can be quickly thwarted by the return of the patient to conditions that contributed to his debility.

Broad programs of public health and social assistance are comparatively recent innovations in Peru. The Ministry of Public Health and Social Assistance was created in 1935. Since that time it has undergone a notable evolution culminating in its assuming major responsibility for preventive and therapeutic medical assistance, health education, and hygiene.

Until a short while ago it was the policy of the ministry to attack an epidemic by localizing and mitigating it, without doing more. Today, however, the policy is not only to attack the acute state but slowly to educate the people in the ways of modern health measures that might prevent sickness. Toward this end, the ministry has created the Department of Education and Sanitary Information as well as specialized sections for education and propaganda in the various services, such as the antituberculoso, the antivenereo and the anticanceroso. These services publish articles and bulletins for the general public, send out posters, organize displays, and exhibit movies, for the purpose of educating the people in hygiene and sanitation. Moreover, in the Department of Ica, with the assistance of the Rockefeller Foundation, a model public-health service has been established to demonstrate what can be done in preventive medicine by means of immunizations and vaccinations.

Great strides in public-health work have been made in Peru in spite of lack of available funds. Little more than 5,000,000 sols was budgeted in 1939. If we calculate only 10 sols per person as the minimum expenditure that should be made for public health, the amount expended for the republic should approximate 70 million sols. But funds for health have risen since 1939, and in 1944 were 15 million sols plus special funds, welfare appropriations, and the like, which raised them to about 50 million sols.

Preventive health services have been created to combat tuberculosis, malaria, venereal disease, leprosy, yellow fever, and plague. For the care of children with tuberculosis there is a 100-bed pavilion at the Children's Hospital in Lima. In 1940, a 100-bed preventorium was opened in Collique, and is now being enlarged by two other pavilions with 150 additional beds. Other preventoria have been created at Chosica and Huancoyo with 100 beds. The drive on malaria has been greatly intensified in late years. For malaria control there are now 8 services, 29 dispensaries, 2 hospitals, and 2 others under construction. The Pan-American Sanitary Office has cooperated with the Government in some intensive control work in the

Valley of Chancay to the end that the spleen index has been reduced from 8 to 1.25. With the same cooperation, 9 haciendas on the coast have been surveyed for the purpose of improving rural health conditions. The National Vaccination Service has been organized to further preventive work, with the result that the number of vaccinations against smallpox increased from 200,000 a year to 1,650,000 in 1944. Typhus vaccination was introduced in 1944.

The National Service of Yellow Fever has been continued in 6 departments with the help of the Rockefeller Foundation. Special vaccination services have been established in areas menaced by the disease, and 165,000 persons had been inoculated by 1945.

Under the health supervision in the interior, the National Leprosy Service had introduced prophylactic and therapeutic services for lepers, and the amount of money budgeted for this work increased from 238,774 sols in 1943 to 800,000 in 1945.

The Servicio Nacional Antivenereo operates 43 dispensaries, and during 1944, 21,107 patients were treated.

With the help of the Servicio Interamericana de Salud Publica, a direct attack on the tremendous health problems of the interior of Peru has been made. Between 1942 and 1945 this agency spent 6,500,000 sols in building 6 hospitals in the interior region. Its main purpose is to carry out a program of preventive and curative medicine and the agency is staffed by almost 800 doctors, sanitary engineers and inspectors, nurses, and laboratory technicians, most of whom are Peruvians. Besides the principal hospital built in Iquitos, others have been constructed at Tingo Maria, Pucallpa, Yurimaguas, San Martin, and Satipo. Also the service has experimented with launches plying up and down the Ucayali River bearing medical personnel who bring modern medical care to the more isolated families. A mobile medical dispensary having physician, nurse, drug, and small surgery services, has been established to operate between Tingo Maria and Pucallpa.

Studies of hospital requirements indicate that there ought to be at least 5 beds to each 1,000 persons; Peru has about 14,000 beds instead of the minimum requirement of 35,000. The Government has been preoccupied since 1940 with the obvious scarcity of hospitals. Since then, the number of hospitals has risen from 100 to 139 and the number of beds from 7,000 to 14,000. During 1940, eight new Societies of Public Benefit were started. A hospital was constructed at Camana with funds from the antimalaria campaign, and during 1944 three hospitals with 250 beds were completed. Shortly, 3 other hospitals with 240 beds will be finished, all in different sections of the country.

FOOD PRODUCTION

The most effective program in food production in Peru has been carried out by the Servicio Cooperativo Inter-Americano Produccion Altimenticios, a cooperative program of the Institute of Inter-American Affairs of the United States and the Ministry of Agriculture of Peru. The servicio is financed by contributions from both Governments and is staffed by nationals of both. It is an integral part of the host government, but its director is a United States citizen, and chief of an institute field party of United States technicians. All work undertaken is first agreed upon by the Minister of Agriculture and the director of the servicio and is embodied in a written project agreement. All expenditures, appointment of personnel, selection of projects, and other important operating details are subject to the joint control of the host government and the institute.

The principal work of the agricultural servicio in Peru has been the creation and continuous expansion of an extension service patterned after that of the United States. Through field demonstrations and visits to individual farms, agents assist farmers to obtain, care for, and use needed equipment; to practice advanced methods of soil conservation, irrigations, crop production, and disease and insect control; and to improve livestock breeding, management, and feeding techniques. Starting with a nucleus of 11 offices in 1943, the servicio now operates 30 rural offices in the most important productive areas.

In 1948, the extension service projects were reorganized into five principal divisions: (1) Field service, (2) technical aids and program development, (3) juvenile clubs, home and institutional gardens, (4) nutrition and home management, (5) information service.

The fruit program, for example, consisted of two main phases, cooperative nurseries, and demonstrations of pest control, grafting, and industrial production planning. The location of the nurseries was planned, with the soils and climate being taken into consideration as well as prospective improvement of the area concerned. Demonstration orchards have also been established in several regions to teach farmers methods of controlling insects and diseases attacking fruit trees, as well as to familiarize them with systems of renewing old orchards, of pruning, and of cultivation and fertilization.

The servicio has continued to demonstrate the use of new insecticides and fungicides that have become available.

Seeds for home gardens have been distributed, and investigations of home-management and nutrition problems among the rural population have been made.

Livestock and poultry production has been stimulated by the importation of baby chicks and breeding goats from the United States. The servicio cooperates with the Livestock Division in sanitary problems concerning livestock.

Land improvement and engineering projects on soil conservation, irrigation and drainage, storage facilities and other structures have been developed in cooperation with other institutions and with private landowners.

Associated with the servicio is a network of cooperative machinery pools that make modern machinery available to small farmers who could not otherwise afford to use the mechanized equipment essential to low-cost production.

As part of the work of the field service, technical information and bulletins have been prepared and distributed to landowners, farmers, students of agronomy, and teachers.

In 1942, a cooperative agricultural station was started in the interior area, east of the Andes, as a cooperative project between the United States Department of Agriculture and the Government of

Peru. The work consisted of research and extension projects on tropical crops and livestock adapted to the area. This station is located at Tingo Maria, which in the beginning was virtually a jungle, but is now a thriving community with a village of 3,000 inhabitants and with about 500 farmers in the area.

The Estacion Central de Colonizacion en Tingo Maria has continuously staffed itself with United States and Peruvian technicians, who have carried on their projects in the immediate area of the station. The program has developed to the extent that the results of the research work are being expanded to other areas in eastern Peru. This expansion will be principally through the extension activities of the station, and the national extension service agents located in the adjoining areas. The extension specialist of the cooperative station will serve as liaison in program formulation and activities, extending the research results in crop and livestock production, and in farm and home-management practices to farmers in eastern Peru.

Facts about Peru

Of prime importance in working with Peruvians is an understanding of the social class structure, of the importance of the family institution, and of informal groupings. This, in turn, requires some knowledge of what the people value most. That is, one must learn to respect the symbols of Peruvian culture, which are meaningful to the people, and through them to facilitate human relationships.

Next, the worker should become familiar with the existing channels of communication through which the groups may be reached.

Finally, some means of ascertaining the awareness of need in the general population must be used to help direct any line of attack that seems to be desirable.

Venezuela

Rural-life problems

The major farm, home, and rural-community problems of Venezuela are similar to those more or less common to all Latin American countries. Venezuelan agriculture is still patterned largely after the feudal system implanted by the early Spanish colonizers. This means that Venezuela has an upper-group class of large landowners or hacendados, almost a complete absence of the middle-class family farm population such as that in the United States, and an overwhelming proportion of landless ruralites dependent upon agriculture and nonagricultural pursuits for a meager living. In addition to this unequal distribution of land and the opportunities that ownership of land provides, Venezuela has an outmoded, inefficient marketing and distribution system, so that there is little, if any, relationship between the exorbitantly high prices consumers pay for locally grown agricultural products and the prices received by the original producers of these same commodities. Hand in hand with these two problems, Venzuela has a disadvantaged rural population. Except for that of the relatively few large landholders, the level of living for the bulk of the rural population is low and does not permit a fair share of basic elements for living such as adequate income, housing, food, clothing, medical care, communication, and education.

Specifically, some additional major farm, home, and community problems are:

Need for machinery and implements.
Lack of technical knowledge in agricultural research.
Lack of sanitation and medical facilities.
Lack of education.

Present practices

In recent years the Venezuelan Government has given some attention to the foregoing problems. There has been an active agrarian reform law which, when the agrarian institute is finally brought into operation, will make for concerted effort to place some of the landless population on suitable farms. The Government has already moved to expropriate unused tracts of land and is tackling the problem relating to the latifundium. It is proposed that the agrarian institute will, through a system of farmer cooperatives, make possible education of some of the masses in the use of modern techniques of agriculture and thereby raise the level of living.

Farm implements and farm machinery are very scarce. Only large commercial or government-directed farms have machinery. In fact, horsepower or mechanical power is almost nonexistent on the average small farm. Small areas are cultivated by the farm family with the hoe and machete, which is the small farmer's most important farm tool. Plant residues are largely removed by cattle or by burning. Where cultivation is done, it is shallow. Implements and farm machinery are largely imported, consequently very expensive. Lack of knowledge of how to operate implements and machines efficiently is a large factor in hindering their use. Spare parts for repair are difficult to obtain, and local facilities are not adequate for making parts or doing many repair jobs. Along with the need for farm implements and farm machinery is the need for power to operate them.

Large companies and government-directed farms have some technically trained personnel. The average farmer is poorly educated and has little conception of modern agriculture. He farms much as his forefathers did, with few improvements. Disease resistance in crops, especially in adapted or improved varieties, is limited. No selection or special care is used in obtaining seed for planting, or in the extensive breeding of improved varieties.

The Ministry of Sanitation and Health has recently expanded its rural health program so that real progress is being made in the elimination of malaria and some of the sources of intestinal diseases, which are so common in the tropics. Doctors are being supplied as rapidly as they can be trained, and hospitals are being built in the populous centers, but the chief obstacle has been the lack of trained personnel.

The Ministry of Education has started a rural educational program whereby, by providing a combination of training in home economics, agriculture, and industrial arts, some of the communities will have their first introduction to these areas of education. The Ministry of Education is also expanding the building of rural elementary and of secondary schools, so that real progress can be made in solving the problem of illiteracy and creating a desire in the native population through education, to want a higher level of living and to work for it.

Under the leadership of the Inter-American Basic Economy Corporation, a series of demonstration projects has been started in Venezuela. These include vegetable- and fruit-processing plants; fish canning, fish processing, and refrigeration plants; dairy production; food distribution; and several other projects. They attempt to change the nutritional standards of the native population so that the people will consume more foods of nutritive value.

Under the Ministry of Agriculture, special clubs have been organized among rural boys and girls. Also in the ministry, largely because of a cooperative-demonstration project originally sponsored by the Institute of Inter-American Affairs, home demonstration agents have been appointed and home demonstration clubs have been organized to work on rural-life problems.

Concern for change

Effective promulgation of all farm and home programs in Venezuela depends upon the concern of the government in power. If that government is aware of these problems and desires to solve them, effective programs will be made operative. On the other hand, if that government lacks leadership in such programs, then little progress can be made toward their solution. Venezuela does not differ from most other countries in this respect. The church is of minor influence among Venezuelans. Therefore, unless the influence of the church changes, little can be expected from leadership from that source. Cooperative organizations so far have been wholly on a commodity basis, and as such their concern has been almost exclusively for their own producer members. They have not, as yet, shown much concern for the general welfare of the agricultural population.

The central Government evinces concern about getting more implements and machinery on the farm. Farming companies, especially the sugarcane growers, are using machinery wherever possible. Large farming companies are mechanized. The school systems are teaching improved methods of tillage. The Government has some schools established where students can learn the mechanics and operation of power equipment, and assist in placing trained men where they are needed.

The central Government and the university are interested in developing improved varieties of farm crops. A plant breeder from the United States has spent some years at the experiment station and has developed superior varieties of corn, sesame, and other crops. Experiments are being carried out at other points on sisal and sugarcane. However, faclities are inadequate and understaffed. Technical knowledge in agriculture is limited. The facilities for gaining such knowledge, distribution, and practical application are small. The Department of Agriculture staff for collecting statistical information is small and often lacking in trained personnel. The soils department consists of three trained soil scientists and a few laboratory technicians. The forestry department has about eight trained foresters. The department of conservation is composed of four professional men. Scientists from other countries are in each of these departments.

Extension approaches

Extension approaches and their effectiveness in most cases depend upon the degree of knowledge and the sincerity of the persons in charge. Foreign technicians in agricultural sciences and practices have made suggestions about most of the programs and assisted with these programs. In an effort to apply technical knowledge in agriculture, work has been done at the experimental stations for a period of 10 years or more, and demonstrations are in use. The use of farm machinery has been demonstrated, but more demonstrations are needed in the use of simple, improved mechanical tools that can be made available for the use of more people. However, the central Government is making rapid strides in developing the country. Probably more progress is being made in education than in any other way. Schools are being built, teachers obtained, and some compulsory measures taken to encourage more children to attend these schools. Particular attention is being given to rural workers through groups of boys and girls and through farm women. These groups organize into practical classes, where all join in carrying out a project. This may be the remodeling of a home and its furnishings, instruction in food preparation, or the planting of a garden. But though progress is being made, many years of education and effort will be required to bring about the many changes needed for agricultural improvement.

COMMITTEE MEMBERS: John V. Hepler, Office of Foreign Agricultural Relations, United States Department of Agriculture, Chairman; Ralph H. Allee, Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica, Cochairman; T. Lynn Smith, Vanderbilt University, Nashville, Tenn., Cochairman; Paul G. Adams, Oklahoma Agricultural and Mechanical College, Stillwater; Victor M. Aguilar, Embassy of Guatemala; U. S. Allison, Soil Conservation Service, United States Department of Agriculture, San Juan, P. R.; Benjamin J. Birdsall, Office of Foreign Agricultural Relations, United States Department of Agriculture; C. L. Blackman, Ohio State University, Columbus; Jorge Bolton, Chilean Department of Extension, Santiago; William C. Brister, Institute of Inter-American Affairs, United States Department of State; Dario Brossard, Food and Agriculture Organization of the United Nations; José L. Colom, Organization of American States, Washington, D. C.; S. B. Fenne, Virginia Agricultural Extension Service, Blacksburg; Theodore C. Green, Soil Conservation Service, United States Department of Agriculture, Blacksburg, Va.; Mrs. Mildred S. Hatch, YMCA (Mexico), Saint Johnsbury, Vt.; Ira Hatch, YMCA (Mexico), Saint Johnsbury, Vt.; Hazel M. Hatcher, Pennsylvania State College, State College; Rey M. Hill, Institute of Inter-American Affairs, United States Department of State; Frank F. Lesesne, Soil Conservation Service, United States Department of Agriculture, Kingstree, S. C.; T. Wilson Longmore, Bureau of Agricultural Economics, United States Department of Agriculture; Charles P. Loomis, Michigan State College of Agriculture, East Lansing; George M. McBride, University of California, Los Angeles; Ross E. Moore, Office of Foreign Agricultural Relations, United States Department of Agriculture; Lowry Nelson, University of Minnesota, University Farm, St. Paul 1; Modesto Ortiz-Rigau, Extension Service, University of Puerto Rico, Rio Piedras; Emma Reh, Food and Agriculture Organization; Don Stoops, Production and Marketing Administration, United States Department of Agriculture; C. M. Trujillo, Veterans' Administration, Socorro, N. Mex.; Phill Trujillo, Chimayo, N. Mex.; Gertrude L. Warren, Extension Service, United States Department of Agriculture; N. L. Whetten, University of Connecticut, Storrs.

MISCELLANEOUS COMMITTEE REPORTS

Extension Education and the Private Agency Defined

By extension education we mean an informal educational process by which people are taught to help themselves by utilizing more fully their own material and spiritual resources and availing themselves of appropriate outside assistance.

The private agencies involved in this report are those supported by private funds and interested in programs of change or improvement in the life of rural people, and with important or primary emphasis on problems of foreign countries.

History

Extension education as it is known today is a long-time development to which private agencies have made a major contribution. Agricultural societies and schools, the press, professional and scientific societies and foundations, and the church, especially in the mission field, all have taken an important part in developing techniques and personnel.

Work by Private Agencies Since 1944, a Review and Appraisal

Since 1944, an increasing number of private agencies have entered the field of foreign service. A complete listing, classification, and evaluation of their objectives, methods, and results should reveal the trends and relative emphasis in types of problems and methods of attack for the areas served.

The activities of the limited number (three) of private agencies whose representatives have attended both conferences have shown a growing tendency toward a more comprehensive approach to the problem of families and communities, together with greater integration of specialist help used in their solution.

In order to carry forward the viewpoints of a larger number of private agencies represented at the 1944 conference (*9*), much of the report of that conference has been reiterated in this statement.

The Place of the Private Agency

The report of the 1944 conference made clear the important place that private agencies have had in the development of extension work. They have had freedom to pioneer in the development of local programs and to experiment in methods and techniques and in demonstrating the value or lack of value of certain approaches to a given situation. It is recognized that though governmental agencies ultimately will assume more and more of the responsibility for utilizing proved results, private agencies may continue to pioneer in the foregoing fields in meeting unmet needs and to contribute to the general welfare by supplementing what governments may be able to undertake.

This division of function between government and private agencies is natural and right. Governments have responsibilities that private agencies should not assume and resources they cannot match. In some situations private agencies can initiate certain types of action more readily than can government, especially where continuing effort largely depends on local initiative and a large share of financial support. In certain situations the functions of governments and private agencies may be supplementary or complementary to each other.

The usefulness of American private agencies working abroad arises from certain factors. Private agencies are, to a large extent, free from diplomatic and international complications and less likely to be regarded with suspicion or as having ulterior motives, whether political, economic, or cultural. They are free to use their resources with a minimum of restrictions. Thus they are able to embark on enterprises worthy of trial, even though full success may not be assured. This has been especially true of some philanthropic foundations in their assistance to pioneer extension efforts in the fields of health and adult education, and in varied fields of agriculture.

Private agencies can include in their program aspects of life and phases of activity that, if undertaken by government agencies, would be more likely to arouse resentment as undue interference or favoritism.

Private agencies are often able to approach problems in a spirit and with a motivation that may be a large factor in the successful solution of those problems.

Private agencies are able to use in the selection of personnel criteria different from those accepted by governments.

Private agencies are usually able to plan programs looking farther into the future than government agencies can plan.

Many governments are neutral in religious and spiritual matters, yet these factors may be dominant in the solution of some problems.

The motivation of the private agency usually carries with it a spirit of service and a humanitarian sympathy that may be strong factors in persuading people to change established patterns for better ways. Its purpose in undertaking extension work cannot be separated from a spiritual motive.

Considerations in Policy Formulation

Relations to government

History clearly demonstrates that private and voluntary agencies have a highly significant place in the service of human needs and social progress. The vast size of postwar rehabilitation tasks taxes the resources of both public and voluntary agencies. Governments having a paramount interest in the rehabilitation of their people have responded to the utmost of their abilities. The private or voluntary agencies come into touch with governments at more points than heretofore. Any private agency, therefore, that desires to serve the fundamental concerns of the people of another country will need to work out with the established government or governmental agencies its field of service in ways that will supplement governmental programs or add scope and strength to those programs.

In many countries some agency already exists, even though the name and pattern vary greatly from country to country. Where such an agency exists, the extension service of the private agency should, where possible, be designed to supplement and strengthen its work. In the rehabilitation of war-torn countries, the effective establishment of indigenous agencies that are rooted in the patterns, needs, and purposes of the people is an essential aim. Private agencies should in all appropriate ways continue to foster and supplement the services of such agencies and help the people to develop and to carry forward their own plans for rebuilding their life and economy.

The years since the close of the war have forcefully demonstrated that the voluntary agency with its personalized and sympathetic approach has a tremendous contribution to make. Its influence upon the whole program of reconstruction may be much wider than its limited resources would indicate.

Consequently, the use of private subscriptions, in addition to allocated funds by international or governmental agencies, should receive serious consideration as to its possible effects on established and continuing programs of private agencies.

Personnel

The qualifications and character of the administrative and operating personnel in extension service transcend all other considerations. No program, however well conceived, will rise above those who are responsible for it.

In addition to competence in the field of specialty, a capacity is needed to translate this information into a form that can be applied to varying but specific situations. In the procurement and training of personnel for extension by private agencies, public agricultural agencies and institutions in the United States may be especially helpful by providing some of this training and establishing standards of professional adequacy. The committee commends the development of the training conference in extension methods for rural missionaries, sponsored by the coöperative Extension Service of the United States Department of Agriculture for the past 5 years. A further development of this type of training that would be helpful to private-agency personnel would include field training in situations similar to those the worker will face. In training and using personnel, more emphasis than in the past should be given to adapting subject matter to the problems of the area involved.

Cooperation Among Private Agencies

In the interest of making a maximum contribution to the welfare of a people, private agencies having operating programs in the same country and possessing related objectives should find it increasingly important to develop at home, preferably in advance of actual work abroad, a working coordination of their undertakings in the field. Such coordination should facilitate the understandings and good will that are likely to accompany such a united approach to the established governments. Such correlation of their field activities should result in greater total effectiveness without loss of autonomy.

Determination of Program

Private agencies need to determine their extension programs in light of the type of contribution they can make. They can develop intensive pilot projects and demonstrate how some techniques are superior to others. Because of the more limited and intensive work of private agencies, they should be careful to start where the people are, treat farm and home problems as a unit, view special problems against local community life as a whole, use the principle of self-help, begin with the obvious and move later to more deep-lying problems, use the time-tested, common, but sound knowledge of the farmer, gain the understanding of government and other agencies, limit the extent and variety of attempted programs to what is feasible in terms of available resources and personnel, and attain the participative sharing of local people in the planning, operating, and supporting of extension programs.

Extension services are best related to the needs of local people. If awareness of need is lacking, however, it may be developed by appropriate effort on the part of extension workers.

The importance of considering home and farm as parts of one whole will be clearly seen in agricultural rehabilitation. In many areas the wife and mother shares heavily in the work on the land and in the care of herds and flocks, and at the same time manages the home, prepares the food, and rears the children. Thus, extension programs must be concerned not with the land and agricultural practices alone but also with the physical and social well-being of all members of the farm family.

Perhaps most important of all is the private agency's responsibility and opportunity to launch programs that develop local community resources and leadership. To this end, widespread participation in planning and operation of programs is essential. Participation serves a twofold objective: (1) It provides primary experience important for understanding, and (2) arouses powerful motives by identifying the participant with the success of the outcome.

The following procedures and techniques, as well as many others, have been used with varying degrees of success by private as well as public agencies in different parts of the world:

Field exploration should precede program determination.

Work first in that phase of rural community life which will insure continuation into a well-rounded program.

Limit the size of the area served to one that will be an effective laboratory and demonstration.

Select an area that is accessible in order to maintain public interest, and enlist the cooperation of government officials.

Study local farm and home practices continuously through simple surveys made by native field agents.

Promote proved farm and home practices suitable to the area.

Introduce new or improved practices through individual farmers or homemakers whose confidence has been won.

Arrange for field agents to live and work in daily contact with people they expect to serve.

Hold field workers to a definite schedule to develop appreciation by local people of punctuality as a saver of time and energy.

Use good teaching methods and provide constant training of local workers in such methods.

Initiate, where feasible, extension programs with service types of work and then proceed to longe-range programs of farm and home improvements.

Develop simple yardsticks for recording and reporting adoption of improved practices on the farm and in the home, to inform both leaders and local people of progress.

Translate increased income into better homes, more adequate health protection, and a more abundant life.

Private agencies also utilize teaching devices such as posters, stereopticon slides, slidefilms and moving pictures, bulletins and pamphlets (where the rate of literacy is fair), and folk stories. They also use institutes, fairs and exhibits, the drama, and many other educational techniques generally known to wide-awake extension workers.

Evaluating and Measuring Results

An objective evaluation and measurement of results achieved is important in all extension programs designed by private agencies. Although intentions are no substitutes for measurable results, changes in attitudes as well as qualitative measurements should be reported. Such a study of results is of value in determining the effectiveness of the methods used, the effort expended, and the money invested. The practice is also of value to the workers themselves. It can be used to encourage still greater improvement among the people of a community and serve as concrete evidence to the contributors back home that their investment is returning good dividends in human betterment. Finally the setting up of proper measurements frequently aids in defining more clearly the objectives sought.

No one best method can be outlined for measuring the results of a private agency's extension program. A few simple suggestions are, to outline the specific objectives of the various phases of the program, determine how the success and failure of each phase can be measured, and record the actual accomplishments achieved by the various methods and techniques used. Some such system as this properly applied will constructively modify many of the traditional forms of record keeping and reporting, which have tended to emphasize the means used by the extension workers rather than the improved farm and home practices actually adopted by the people being served.

Future Fields of Private-Agency Activity

Continue to pioneer with pilot projects.

Continue to make the experiences of private agencies available to governments.

Place increased emphasis on integrated, comprehensive programs.

Use the family as a specific approach to rural life betterment in test areas.

In certain larger political and geographical areas, utilize an integrated and coordinated approach through various agencies attacking the same major problems. Not only private, national, and international, but local agencies and groups should be included.

Provide a fellowship program for those on the lower levels of government work and for those with lower levels of training. Consideration should be given to training people who would be fitted to return and carry out the program at the local level.

Encourage the development of private agencies in foreign countries.

Conclusions

Extension education work by private agencies in foreign countries insures a wholesome diversity in programs and approaches. Additional private agencies are providing new programs and approaches with pilot projects. Such work of private agencies can be complementary and supplementary to that of public agencies, which have been expanding greatly in recent years.

The trend in private agencies is toward more comprehensive and integrated programs with continuing emphasis on rural families and improved rural living conditions in villages and communities of underdeveloped areas. Further correlation of programs of private and governmental agencies in foreign countries should improve the effectiveness of extension education.

Increased emphasis on objective evaluations of results obtained by private agencies is desirable. Perhaps such a study of private and governmental efforts would be mutually helpful. Some encouragement to development of private agencies in foreign countries might multiply our present efforts.

Perhaps the success of extension programs of private agencies can be best measured by the extent to which local people have been induced to participate creatively in the solution of their present problems and their ability to analyze the problems they are facing.

COMMITTEE MEMBERS: Leland G. Allbaugh, Rockefeller Foundation, New York, N. Y., Chairman; Clara B. Ackerman, Extension Service, United States Department of Agriculture; H. B. Allen, Near East Foundation, New York, N. Y.; Elin L. Anderson, Extension Service, United States Department of Agriculture; Kenyon Boocock, Conservation Foundation, New York, N. Y.; A. C. Cooley, Bureau of Indian Affairs, United States Department of the Interior; Paul F. Craig-Martin, International Bank for Reconstruction and Development, Washington, D. C.; Russell H. Gist, Extension Service, University of West Virginia, Morgantown; S. P. Lyle, Extension Service, United States Department of Agriculture; I. W. Moomaw, Agricultural Missions, Inc., New York, N. Y.; Louise Stanley, Agricultural Research Administration, United States Department of Agriculture; T. B. Symons, College of Agriculture, University of Maryland, College Park; Meredith C. Wilson, Extension Service.

United States Department of Agriculture; Bonney Youngblood, Office of Experiment Stations, United States Department of Agriculture; Ben Reifel, Fort Berthold Indian Reservation, Elbowoods, N. Dak.; John H. Reisner, Agricultural Missions, Inc., New York, N. Y.

The Social Sciences in Relation to Extension Work

The Contribution Sociology, Anthropology, and Social Psychology Can Make to an Understanding of the Problems Involved

An effective program consists of a synthesis of technical and practical knowledge. It also consists of the construction and operation of channels of communication between rural folk knowledge at one end of these channels and scientific knowledge and administrative authority at the other. Sociology, cultural anthropology, and social psychology are the social sciences tht have developed knowledge of the groups that live and work at the two ends of these channels and techniques for analyzing and understanding them. These sciences also possess the techniques that make possible continuous study of the interactions of the groups involved in the operation of an extension program.

Some of the knowledge and understanding that these social sciences can contribute are needed even before an extension program is launched. But successful operation of the extension program will automatically change the behavior of groups involved in the program, will almost certainly change the channels of communication between these groups, and thus will change all the situations that existed before the program was launched. Social sciences can therefore make a contribution to an extension program after it is launched, while it is in operation, and while it is in preparation.

The very purpose of an extension program is to introduce change. In human relations it is impossible to foresee the effects of one change after another, hence there is no way of planning or plotting the program by a fixed blueprint such as is possible and feasible in constructing a bridge or a highway. It is within the function and capacity of the social scientist and it should be his responsibility to observe, analyze, and report upon the influences of changes that are accomplished and to make recommendations for the constant effective adjustment and readjustment of the extension program and processes.

Cultural anthropologists have made hundreds of studies of rural folk groups and folk cultures. Sociologists are constantly studying social structures and social processes. Sociologists and social psychlogists are constantly studying personal and group interactions. Out of the understanding they have developed and by means of the analysis techniques they have evolved, they are in a position (1) to analyze the groups involved in an extension program, (2) to analyze the relationships of these groups one to the other—that is, the channels of communication between them—and (3) constantly to analyze and appraise the changes that have been accomplished and the progressive adjustments that are needed in the program in light of these changes.

In a report of this length, the best that can be done is to set forth principles and present a few examples of where and how these principles have operated in situations similar to those technical people will meet in the underdeveloped areas of the world.

Introducing and Inducing Change in Folk Practices

Societies differ in their value systems

Every society has certain practices and beliefs which the members of that society consider the most important and valuable things in life. Through the years, elaborate institutions have developed to safeguard and perpetuate these values, and the elders see to it that all young members of the society become thoroughly conversant and imbued with the beliefs that sustain these institutions. In the United States, a premium is put upon success and individual initiative, whereas many other societies minimize individual initiative by urging social conformity as tremendously important.

Thus there are two important points to remember in connection with the value system of any society: (1) It exists and is so deeply ingrained that to ignore it would be folly; (2) the value system of one society differs in many details from that of another society. Programs must be tailored to fit in with the value system of the specific group whose practices it is desired or necessary to change and to use that system.

These points become clear if we use an Arab society as an illustration. There the social values are based on the family, church, and village rather than on the individual. Tannous says, "To the fellah there is no segregation of his land and agriculture from his religion, social activity, family life, and community organization. This influence (of church, family, and community) extends also to such personal affairs as marriage, funerals, rotation of crops, and methods of cultivation." He adds, "Social control in these compact settlements is strong and effective, and the fellah will hesitate to take a new step independently. In facing such situations individuals manifest their community consciousness through such statements as 'The whole village is for the new idea,' 'The village is against this innovation,' 'I like what you suggest, but I cannot stand against my village.' " *(1–b)*

Anyone from a non-Arab society who compares the aforementioned traits with the values of his own society can readily see that he cannot approach an Arab community through an American value system. Any program must be fitted into the specific characteristics of a particular society and make use of those characteristics. There are far too many examples of programs, well-intentioned and unselfishly inspired, that fail because these basic cultural principles are ignored.

Societies are already organized

A second principle of major importance in the task of changing folk practices is the recognition that societies are already organized to do for their members what those people think is important. Through the centuries, every people has worked out a way of life, a set of social relationships that is accepted as "normal" and considered to be the proper and right way of getting anything done.

We can understand this social organization better if we look at some of the parts of which it is composed, provided we recognize that each of these parts is interrelated.

Social institutions.—The social arrangements worked out over a long period of time to meet life's basic needs include:

1. Families, through which procreation is carried on and the cultural heritage transmitted to each succeeding generation.

Societies differ considerably with respect to specific family patterns, but universally we find infants born into a family circle in which parents or relatives have fixed responsibilities for the customary upbringing of the child. Anyone wishing to change established practices must know the important role played by the family and try to find the points at which the institution of the family can be made to serve the program of change. If parents can be really shown that their children will benefit by a different health procedure, then they may adopt it. If young people, before establishing homes of their own, can be taught new ways of doing things, they will be likely to pass on such practices to their own children.

In the United States most of us probably know something about the Chinese family as one of the ancient institution cultures. "Continuing the family line is the main concern of the Chinese farmer," says Martin Yang. "Children, parents, and grandparents are a tightly knit unit and when that unit or unity is imperiled, all members feel the disaster" (*11*).

One who assumes that any program of activity is possible when it contemplates merely training individuals to act purely as individuals, is doomed to disappointment in societies where families are the core units of culture. As Yang says, "The individual when he attempts to act in a purely secular fashion finds that he is enmeshed in a family structure which dictates that he do only his age-old assigned division of labor and do it for a family, not a personal objective."

2. Maintenance institutions through which the material needs are met.

Every people has organized itself so as to insure a food supply, shelter, whatever clothing is deemed necessary, and transportation. In the simpler economies, such activities are primarily connected with the family institution, but along with advancing technology come a more complicated property system, greater occupational specialization, a marked division of labor, and social arrangements for producing the material necessities by joint effort and for distributing such products widely.

Any attempt to change methods of production, to equalize distribution, or to alter consumers' demands must take into account the existing maintenance institution. Property rights, for example, cannot be blithely ignored, nor can people be easily persuaded to eat what they consider to be unclean or what they revere as a totem. Furthermore, cash incomes are very small among most of the world's people, and these people do not possess the economic capacity to pay for many of the implements, purebred stock, animal feeds, commercial fertilizers, and the like that would-be reformers urge them to procure. In most peasant societies a villager prefers an extra strip of land to a tractor. He will say, "I can grow more food out of the land and can eat this food, but the tractor produces nothing out of itself." A tractor, of course, does save labor and make for more efficient plowing, but most peasant families already have a surplus of labor for the small farms they call their own. Therefore, any program of change, if it is to be successful, must face this reality, not just in terms of buying and productive capacity, but also in terms of the existing social arrangements governing economic activities.

An example of the resistance of a group of natives to the adoption of "wet rice" cultivation is cited by Linton. One of the Tanalan clans of Madagascar objected because irrigation practices would result in continuous farming of one tract and, as a consequence, would develop individual rather than group rights in land holdings. Such a development would lessen the importance of the "joint-family" not only in ownership but also in cooperative labor and mutual sharing. The clan did not deny the superiority of wet-rice culture in producing maintenance goods, but it was resistant to an innovation that so drastically altered social arrangements that are sacred to it (*5*).

Many similar instances could be cited. There are others, altogether too few, where administrators have tied their programs to existent local social structures and value systems and thereby facilitated adoption of new practices.

3. Government, which is supposed to maintain law and order, protect from foes without, and in general promote the welfare of the society.

In western nations, governments increasingly become associated with programs designed to change the old established ways in favor of scientific, rational practices. But those societies where government by elders is the chief pattern are largely ruled by custom and tradition and tend to resist rapid change. Even so, every government, since it is essentially a social arrangement, has ways of reaching those within its territory and there is no escape from using it.

In some countries, the central government is in fairly close touch with its citizens and is a relatively effective mechanism for transmitting new ideas and initiating social change. In other countries, the people view government as nothing but a tax-collecting agency which takes, but gives little in return. The people of such countries are suspicious of governmental programs. This is a hurdle that a promoted extension program must jump because it must enter all underdeveloped areas through governments.

If government is to be an effective instrument in programs of change among the masses, it must work through local officials who are truly leaders in local areas. Progress comes faster and is surer when these officials are made intelligent about programs and given heavy responsibility for them. Let us note, for example, the approach that would need to be made in a Japanese village. Each village is generally subdivided for administrative purposes into from 6 to 12 local units called buraku. Each buraku has long been headed by an elected official, whose primary function is to maintain liaison between the village office and the buraku residents. These burakus are the age-old natural groupings of the people that have been converted into administrative units. They in turn are composed of kuru, also ancient neighborhood groups each consisting of from 5 to 10 households. Nothing comes into these local areas from the village, prefecture, or central Government except through this official. To attempt to promote any program in a Japanese village without using these instruments of social action and these units of local government would be little short of folly.

If the social sciences have anything at all to teach, they certainly have proved that popular acceptance of a program is in direct ratio to the degree that local representatives have participated in the conception and formulation of the program, and that progress comes faster when those who are supposed to be helped have something to say about the program in the beginning. Nations with colonial empires have learned, or partially learned, this lesson through painful experience. Anyone who doubts it should read Prof. T. S. Simey's revealing analysis entitled "Welfare and Planning in the West Indies" (7).

4. Some system of education, which is supposed to aid in the preparation of the young for adulthood by inculcating in them the basic social values, and in developing the skills necessary for participation as citizens and as economically self-supporting individuals.

In many societies, the institution of education conducts activities among adults and thus increases their personal satisfactions and social usefulness. The schools, which are the concrete expression of this widespread institution, become the channels for directing some social change. They frequently are busy conserving the past, but do at times bring their energies to bear upon solving local current problems. Rapidity of social change seems directly related to literacy and educational attainment, for these cultivate a questioning frame of mind and open up through pamphlets and books additional channels of communication.

Any program for change, therefore, should carefully assess the part the school can play. Far too often the school is a means of weaning the brightest boys and girls away from their local communities, when it should be more concerned with directing awakened interest on the part of the young into constructive efforts to improve local conditions.

Social change comes more easily when people have developed an experimental or educational point of view, a willingness to try a new practice before condemning it. As schools spread the scientific spirit, even though they may not train professional scientists, they lay an excellent foundation for local and national authorities to use in improving health, agriculture, and homemaking.

The experience of Mexico in launching and carrying forward her great movement of change is a good example of the need for schools and their use. A Federal Secretariat of Public Education was organized and a program designed to carry education to the Indian masses. Persons were first sent into isolated regions to familiarize themselves with local conditions and to stimulate a desire for schooling. Then, when schools were organized, attendance was not confined to children, or the subject matter to literacy education. It was deemed necessary to educate adults as well as children, and it was recognized that the program of change included many types of activity—production, health and sanitation, land reform, and even the reorganization of communities. The first teachers were called missioners and were expected to play the combined roles of teacher, supervisor, administrator, research worker, and philosopher (*10*). Mexico's leaders recognized that their program of change meant change in the life of the masses, and that only the Government could sponsor such a giant movement.

5. A religion, which represents man's adjustment to the uncontrollable forces of his universe, and seeks to orient the individual to these forces (God, Allah, spirits of many kinds) and to acceptable behavior toward his fellow men.

This orientation includes not only a set of beliefs and a means, through worship and sacrifices, of obtaining sufficient dynamics (a recharging of his spiritual batteries, as it were), but it also provides a set of intermediaries (clergy, priests) who stand between the worshipper and the deity and who interpret to the worshipper the will and attributes of the deity.

The history of every society is full of instances in which the intermediaries and the more zealous of the worshippers have opposed social change on the grounds that it was contrary to the will of God. But the records also show, and with increasing frequency in our own day, that the world's major religions are also playing an active part in ministering to the nonspiritual as well as spiritual needs of their adherents. Here, as in the case of government, much depends upon the attitude and training of the local religious leaders. Where there is a desire to change, precedents can be found in almost every religion that would give some religious support to the change. Tannous tells the story of how the installation of a village pump was accomplished in an Arab village after outsiders had absolutely failed in their attempts to accomplish this much-needed sanitary improvement. It was accomplished not only by patiently explaining that the iron pipes would not spoil the taste of the water or quickly drain all the water out of the spring and by demonstrating the labor-saving use of the pump, but also by quoting from the Koran—their Bible—that cleanliness was required from every faithful Moslem and that man should do his best to avoid the danger of disease (*1–b*).

Locality groupings—neighborhoods and communities

Every society contains locality groupings that play an important part in the daily lives of individuals. In rural societies the neighborhood, composed of families living near one another, provides the basis for mutual aid, much social visiting, and the play activities of children. Extending beyond the neighborhood is the community, often a village, with which each individual feels closely identified and which frequently is the center of his little universe. He is susceptible to village opinion, and many of his wants are satisfied locally. In the local setting one finds the various institutional representatives in competition or in cooperation with each other. The "open sesame" to most homes may be through the family elders or the priest, the governmental authorities or the school teacher, the merchant or the physician. Knowing which institutions to stress on the local level grows out of understanding the community and its relation to the larger society of which it is a part. Programs with a community orientation have the greatest chance of success, since the appeal is not to people as separate individuals but as members of a going concern, a set of social relationships, in which all members of the group participate willingly.

Leonard describes such groups among the Bolivian Indians. He says the present-day Ayllus are small, closely knit communal types of locality groupings which originally were held together by social and kinship bonds (clans). The most obvious solidifying force now is common ownership in land. Leonard says, furthermore, that except for the more accessible Ayllus in the Lake Titicaca basin, this fundamental unit of organization in the Bolivian highlands has undergone few fundamental changes in four centuries. The severe exploitation of the native peoples by outsiders has fostered in the Indian fear and distrust of other than his own immediate fellows. Out of this has arisen the general belief that his only chance for any remnant of social, political, and economic security lies in his ability to remain a part of and among his own kind, for it is in the communal life of the Ayllu that he is a bona fide member of a social grouping composed of individuals whom he considers little different from himself (*4*).

Within every community are a number of informal groups that come into existence as people gather to gossip, loaf, or drink. Often the same people come together periodically and share their views with each other, thus becoming a part of the gossip chain that has so much to do with the formation of public opinion. Any extension program should recognize such groupings and see to it that a correct interpretation is made to enough of the "right" people so that the word-of-mouth version aids instead of hinders the activities in view.

Formal organizations also loom large on the horizon of many communities, and where the participation is widely representative or embraces those most influential, these groups can be used to advantage. A number of people can be reached simultaneously and are in position to give the weight of their backing once they become supporters of a program.

The status system and leadership

Every society has ways of ranking individuals either at the top, the middle, or the bottom of the social scale, and expects them to perform the roles appropriate to their social positions. The status system is directly connected with the social values that most of the people share.

Since every program needs leadership to carry it on, those responsible for it must do more than rely upon the institutional leaders previously mentioned. They should also include representatives of the various social layers involved in the program. A landlord is not necessarily the best spokesman for his tenants, nor can the disadvantaged farmer objectively appreciate some of the problems of the large landowner. The views of artisan groups in a village and those of the landed peasants may differ, and the village merchants and their coterie of followers may seriously oppose an uplift program that might seem to endanger their position. In general, the program's accomplishment will be greatly speeded if it has the blessings of the "powers that be," but this alone will not guarantee program acceptance. This is where a broader representation proves of value. Witness the following (in establishing folk schools):

"Because no headway had been made within 3 months' time, it was necessary for the director to visit the community. Upon his arrival he discovered these three representatives had ignored 'Old Chang,' who was the 'head-eye' man of the community. A social get-together was immediately arranged to which 'Old Chang' was invited and accorded due respect. Within 3 weeks three folk schools were opened. 'Old Chang' gave his blessing and his full support once his position as 'the boss' of the community was recognized" (*1–a*).

Disadvantaged people cling strongly to attitudes and beliefs.—By and large, people under stress tend to cling strongly to their beliefs and regard an effort to change them as an increased source of insecurity. However, not all beliefs are equally strong. Some are more intimately tied with the sense of security than are others. It is therefore important to distinguish the fundamental beliefs from those of a more superficial character. As a rule of thumb, one should never attack the fundamental types of beliefs directly. If erroneous and incompatible with reality, the fundamental beliefs will themselves dissolve in the course of time, but nothing gives them life like a direct attack upon them. Their untruth has to be discovered slowly by the people, and at the same rate at which the people are finding new sources of security. A belief upon which a person's security depends cannot simply be wiped out. Disillusion from the belief has to be accompanied by a shift of dependence upon a new kind of support. This means that remedial changes such as those called for in extension work should be planned in successive stages stretched over a period of time.

The extension worker who is trying to make changes within a culture may expect to find one of three attitudes in connection with his program: Acceptance and cooperation, hostility and resistance, or apathy and indifference. It is important for him to realize that these three states of mind can exist and come to bear on him without the main driving force behind them having very much to do with what he does or says. The alert, cooperative, rational type of action is found when people have a reasonable basis for existence; but people under severe stress—physical, social, and psychological—characteristically react by having either a high degree of hostility and aggression which they will discharge on any convenient object that will not annihilate them by retaliation, or by being apathetic and indifferent and therefore not lifting a hand to do much to save themselves. It cannot be stressed too much that behavior of this kind is reactive and almost reflexive among human beings. Therefore, the person who goes out to make changes within the culture of other peoples must expect to find these negative reactions when the people are suffering stress, which of course is the case in most of the underdeveloped areas across the world. One is doomed to failure and disappointment if he expects to be able to overcome resistance, hostility, or apathy quickly or by any single device or formula. A very long period of consistent and successive demonstrations of the person's reliability and integrity, and his capacity to produce results will be required.

The hope needs to be on the cumulative effect and not on any one or two "shots in the arm."

The positive toeholds that exist in almost all communities, though they do vary in the cultural form, are the opportunity to create a greater economic or subsistence security; and to gain prestige and admiration, that is, for the individuals in the community to gain prestige and admiration by participating in a given activity or having something to do with it.

The best remedy for uncooperative, hostile, and resistant types of behavior is relief of the stresses that are causing these attitudes and actions. That is, one should try to cope with the fundamental causes and not with symptoms, always bearing in mind, however, that neither one remedy nor a single dose it going to do the job. If the program of introducing a change is successful, then not only will the change itself take place, but a whole series of repercussive changes will result from it which markedly alter the picture.

The successful operation of this process was illustrated among the Navajo Indians a few years ago in an attempt to change their breeds of sheep. It was impossible to convince them to follow the type of information that had been throughly validated by scientists. They were fearful that they were being tricked by outsiders whom they had not invited into their midst. Only after a few producers had been induced to use one-half of their grazing land for the production of their old type and the other half for the new type, with a firm financial guarantee of no loss, were the new breeds allowed to prove their superiority in the production of both wool and mutton. Once the new practice was understood, however, the gates to other accomplishments were opened, because the fear, even hostility, of a disadvantaged group had been dispelled by a willingness on the part of the scientist to compromise and wait for proved results.

Introducing and Inducing Change at the Top of the Social Structure

Extension and all other large organized programs must find their way into the economic and social structure and practices of the underdeveloped areas of the world through the medium of the governments of the nations within whose boundaries those areas exist. Therefore, an understanding of, and work with, groups of administrators and technicians who function at the top end of the channels of communication is as important as an understanding of the folkways and social structure of the farm people at the other end of the channels. These groups of administrators and technicians in practically all areas include the national rural-life leaders who have the status and prestige needed not only to launch but to sustain and operate programs of change and improvement.

Like similar groups all over the world, the status and prestige of the groups of administrators and technicians are part of the social structure and culture of their societies. Like every other status group, they have accepted and sanctioned ways of doing things that must be used, must often be mobilized, and sometimes must be changed.

In some ways the established patterns of behavior of these groups are more difficult to change than are the folk practices of the common people, chiefly because personal and professional prestige is at stake. Their members have come into possession of prestige and power partly because they have become qualified by either political activities or technical training. They may not be persons with a large body of knowledge and an understanding of the people in the underdeveloped areas of their countries, but they are educated, influential, and powerful. To the extent that change and improvement are necessary in their ideas, understanding, and operational behavior, no matter how delicate the task, such change and improvement are necessary. Not to utilize their prestige and power and to build upon their past accomplishments is to violate cultural processes. Not to help improve their knowledge and practices is to block or impede the channels of communication by which extension programs reach the people they are designed to assist. Like all cultural change the components of change are complex in these groups, and the process of change necessarily is evolutionary.

The class structure of many areas of the world is such that it is scarcely conceivable that a farm born and reared person will be represented among the technical and governmental leaders. Nonfarm persons must and do perform the roles of leadership in all agricultural programs. They may or may not be theoretically trained, but they are seldom, if ever, practically trained for these roles. Nevertheless, they must be depended upon as the channels through which, and the instruments by which, programs of change and reform are initiated in the agriculture and life of the farm people. To ignore them is impossible; not to understand them as a culture group would be to defeat any and all programs.

In countries in which few or no farm youth receive college or even high-school education, the surest program of change would be to construct a professional ladder by means of which farm youth could and would climb from the level of their folk knowledge to the levels of science. They would then know their way back down the channels of communication to the folk from which they came.

The construction of such a professional ladder, however, necessitates an integral program of education and training from grade schools, through high schools, to college, and this cannot be done quickly. Until a small stream of farm boys and girls with the knowledge of the folk practices and values of the common people has passed through grade school, high school, and college, and these young people have become members of administrative and technical groups at the top of the channels of communication, others must be worked with and depended on.

It cannot be too strongly emphasized that these administrative and technical groups are an integral part of the social structure and culture of every country, that they have traditional and established ways of doing things, have status, prestige, and power; and that they are leaders. They are the vehicles through which extension programs must enter the country, and they must be depended upon to guide and operate the programs once these programs are established. They must be used and must be understood.

In broad terms, the following are part of the social structure and folk culture of these top-level groups in most of the countries that include the underdeveloped areas of the world: (1) Ordinarily, they are persons who were not born and reared on farms. (2) They are few in number and generally highly centralized in both location and organization. (3) The folklore of the class to which they belong, and indeed of their whole society, does not assume that they will communicate freely with the farm people whom extension programs are designed to serve. (4) One of the symbols of their prestige is that they do not work with their hands or talk the language of manual workers or farmers. (5) In many cases the economic and political structure of their culture has dictated that they chiefly serve special segments of the farm population instead of serving all the farm people. (6) In their official capacities they are burdened with many duties of inspection and other police functions. (7) Frequently, neither their technique nor experience has helped them to understand the simple people in isolated rural areas, or to be experts in constructing and operating channels of communication.

These characteristics are not listed as criticisms of persons or groups, but merely to emphasize that no extension program can effectively enter the lines of communication between technicians at the top and practicing farmers at the bottom without passing through the culture groups that constitute the national rural life leaders of all countries; and further to emphasize the fact that the traditional attitudes and functioning operation of these groups are just as truly a part of the country's culture as are the folk practices and attitudes of the farm people of the country.

Extension programs will work effectively to the extent that these groups (1) have a combined knowledge of folk practices and science, (2) have a thorough knowledge of the lines of transmission between science and folk knowledge and between scientists and the folk peoples, and (3) be thoroughly capable of communicating their scientific and technical knowledge by means of all levels of communication through which extension programs must pass from top to bottom and bottom to top. Furthermore, only after this process has worked for a period of time will psychological impediments to communication disappear.

In the meantime, scientists and experts from other areas of the world must and will be working side by side with the administrative and technical groups of the nations within whose boundaries lie the underdeveloped areas. In such cooperative work it is imperative that the foreign experts be sympathetically cognizant that (1) they, as truly as those who work with the simple folk at the grass roots, are working with the processes of cultural change; (2) the people with whom they work have both personal and professional self-respect which must not be violated; and (3) even though the technical and administrative groups of the country may not be so thoroughly trained in the sciences and administrative procedures of extension programs as are their foreign collaborators, they undoubtedly have a far greater knowledge and understanding of their own country, its people, its governmental structure, its social classes, and its customs and traditions.

The Channels of Communication Between Scientists and Administrators and Folk Groups

It has been made clear that extension plays the important role of a dynamic medium of communication between rural folk on the one hand and scientific and administrative authorities on the other. For extension to bear its desired fruit, it must maintain a smooth functioning of this two-way traffic: From the farmer to the scientist and administrator, problems and field experience; and from the scientist and administrator to the farmer, improved practices and techniques. The extension program will suffer to the extent that the channels and techniques of communication between these two groups are inadequate or ineffective. Social science is in a position to make a fundamental contribution to extension in this respect. Its analyses of group relations is a constant reminder of the significance of efficient means of communication and the necessity for them. The knowledge it affords keeps the authorities concerned alert to the possibility of adopting more effective techniques continually. Social scientists, therefore, are equipped with the knowledge that enables them to make a thorough analysis of the channels and techniques of communication that exist in specified situations. By virtue of such analysis, they are able to make pertinent and specific observations, such as—

1. Each culture, and sometimes a region or a community within a culture, has its peculiar means of communication as well as those common to other cultures. It must not be taken for granted that the channels and techniques of one culture necessarily exist in another, or that they would function effectively if they were introduced. To illustrate, written literature is of little value among groups that are highly illiterate. Yet we have many examples of authorities indulging in the production of bulletins, pamphlets, and the like, supposedly for the benefit of such people. Other means of communication of advanced cultures such as mail service, the telephone, the radio, and the automobile, might be lacking or much restricted in the rural areas of less advanced cultures. Local means must be depended upon, possibly improved, until the more advanced techniques are established.

Examples of such local channels follow: (*a*) Womenfolk gossiping at the village bakery and the village well, and during social visits or while doing field work; (*b*) men gossiping in coffeehouses, at threshing floors, during social visits, and sometimes while doing field work; (*c*) news and views exchanged during the weekly market, at funerals, and during religious festivals; (*d*) the village crier, who informs the whole community of important news by shouting it out at night; (*e*) the church bell, which, when struck at a time other than at regular worship, is the signal for the community to be on the alert for an important event; (*f*) the homes of recognized community leaders, the carriers of prestige, where people gather for up-to-date and authentic information on various topics; (*g*) special carriers of messages; (*h*) the village writer, who specializes on writing petitions, letters, and the like, for illiterate folk; (*i*) the story reader or teller; (*j*) other key persons, such as the teacher, the priest, or the headman, who read the paper or other literature to the people and pass on instructions from authorities. Knowledge of these channels and instruments of communication should be had before programs are launched, because the gossip groups can be used to develop suspicion and hostility against the programs as well as receptivity for them. To understand these types of groups and their behavior is as important as a knowledge of physical roads and paths leading into the areas where programs are to be launched. To obtain this understanding, we must turn to the social scientists, who are expert in analyzing these groups.

2. Every means or type of communication has two aspects, the tangible physical or material aspect, and the less tangible social or psychological aspect. The former differs little, whereas the latter differs a great deal from culture to culture. A thorough study of a means of communication with proper evaluation of its psychosocial implication is essential. A poster using a pig to illustrate the essentials of good feeding would certainly defeat its own purpose if used in Moslem communities. An illustration based upon the butchering of a cow would be equally ineffectual among the Hindus. When, some 20 years ago, King ibn Saud of Saudi Arabia introduced the telephone into his country, he was strongly opposed by the religious leaders on the ground that it was the work of the devil. The wise king established that efficient means of communication in the sanctions of his people by making it transmit a verse from the Koran, Allah's Book. That proved that the telephone could not be an evil instrument.

3. The personal touch in human relations is an outstanding characteristic of most folk cultures, where the material aspects of living are not advanced. This trait could very well be utilized by extension as an effective means of communication. In such cultures, ideas and techniques that are transmitted through formal, official businesslike channels are likely to fall upon deaf ears and blind eyes. The people might do something in response to such an approach, but they would do it as a superficial gesture of compliance, rather than as the expression of a genuine, motivated desire to adopt the new practices.

The effectiveness of the personal touch is well illustrated by the following examples of statements that are heard in the villages of the Middle East: "Here I come in person to appeal to you to do this, and I know you will not turn me away with an empty hand!" "For your sake, my friend, I will do anything; you order and I will obey!" "For the sake of my old beard, don't oppose this community project on which we have all agreed!" "This is not a usual order; it is a personal letter from the Director of Agriculture, appealing to each of us in this village to use the new improved seed. Surely we are not going to refuse him this request, which is also for our good!" "I was received by the Director of Education, in person, who inquired about our village school. He said he was going to visit us upon the completion of the new school building. We have to finish the job soon now!"

4. In simple folk cultures, demonstration is an important channel through which an improved technique can be transmitted effectively. These people don't have much of an economic margin that would permit them to experiment with new practices and take the risk of possible failure. Furthermore, they have not built up a tradition of faith in what is written on paper and what is proposed by central authorities. Consequently, the local demonstration of a suggested

improved technique goes very far in convincing the people of the validity of the proposal.

5. An over-all appraisal of this process of communication reveals that each culture has two systems of channels and techniques, one developed and utilized by the scientific, technical, and administrative authorities, the other developed and utilized by the rural communities. Each of these is deep-rooted and firmly established among its supporters, with its peculiar equipment of material facilities, institutions, behavior patterns, and emotional content. The two differ from each other to one degree or another, depending upon the pattern of the culture concerned. In the Middle East and in most Latin American countries, the degree of difference is striking, and represents the great gap that exists between the authorities and the great rural masses. One of the primary tasks of extension is to recognize and understand these differences, and then to work at bringing the two systems of communication closer, until they are geared effectively.

Continuous Appraisal as a Basis for Constant Adjustments in Programs

Extension programs will induce and introduce change, thus not only practices but social relationships and attitudes will be changed. To know in advance what all these changes will be is impossible, and since some of them will be chain reactions, constant analysis is essential to necessary constant adjustments. If hostility develops at either the top or the bottom of the lines of communication or within them, that fact needs to be taken into account immediately. If it becomes apparent that lines of communication are not adequately carrying through from top to bottom or bottom to top because of leaks or blocks, quick rectification is essential in order to forestall hostility or discouragement.

The social scientist's role is constantly to observe, analyze, and understand these processes. To do so, he should not be in an administrative position, but instead be free to study all segments of the total process of change and made responsible for doing so. If his position is an administrative one, he will almost certainly be restricted to one segment of the process and therefore not be able to make the observations and recommendations of which he is capable. He should, however, be a staff person, free to communicate and advise with all responsible administrators and technicians, including those in the highest authority. In such consultation he is the specialist who should be depended upon for an understanding of the beliefs and attitudes that lie back of present practices, and which of these it will be difficult and which easy to change. He should also know to what extent science is being accepted and blended with folk knowledge. His analysis must be sufficiently precise and, especially, sufficiently current to spot chain reactions and keep the program in continuous adjustment. By no means the least of his contributions should be a continuous appraisal of the extent to which the knowledge and desires of the people at the bottom of the channels of communication are traveling upward and being interpreted to technicians and administrators.

As important and essential as is the social scientist's advanced appraisal of social and cultural situations before programs are initiated, far more important is his special role as a member of a team. It must be kept in mind that this team will include not only outside technicians but all the highest authorities and best technicians of the country and the leaders of the folk groups that extension programs are designed to serve. Because human relations are dynamic, the social scientist has learned that his chief task is to study people and programs in action. To do this effectively, he must learn what the human relations, attitudes, and practices are before programs are launched and what desired changes are contemplated. He must analyze constantly what has happened to these human relations, attitudes, and practices in the process of change. Such an analysis is his greatest single contribution to the other members of the team on which he works.

Conclusions

In conclusion it should be stated forthrightly that to the extent that marked change (progress) is accomplished in the development of the natural resources and the economics of the underdeveloped areas of the world, drastic change in the social organization and established patterns of life of the people in these areas will also be changed. These patterns of life are sanctioned by beliefs that their customs and practices are good and to observe them is the right way to live. Leader-follower patterns will be changed, old social institutions will be disturbed, even religious beliefs will have to change. It is not impossible that more harm than good could result unless the changes are initiated and accomplished with the greatest understanding that can be obtained or developed.

The knowledge of sociologists, anthropologists, and social psychologists will never be as exact as that used by the engineer or biologist, but this committee of sociological scientists agrees with President Conant of Harvard who has said it is his belief that methods have already been developed to a point where studies of society by competent scholars can provide basic information to assist all those practical men who struggle with the group of problems listed under the head of human relations. Powerful tools are in the process of being forged by the scientist who studies man as a social animal. These tools can be used to further or to destroy certain types of behavior and certain social patterns (*2*). With him we believe that policy makers in government, business, and education must be increasingly aware of the assistance they can receive from those who study man and society. In no field of human behavior can they receive, or do they need, greater assistance than in programs designed drastically to change the economy and culture of the underdeveloped areas of the world.

COMMITTEE MEMBERS: Carl C. Taylor, Bureau of Agricultural Economics, United States Department of Agriculture, Chairman; Irwin T. Sanders, University of Kentucky, Lexington; Alexander Leighton, Cornell University, Ithaca, N. Y.; Douglas Ensminger, Extension Service, United States Department of Agriculture; Afif Tannous, Office of Foreign Agricultural Relations, United States Department of Agriculture; and Clayton Whipple, Office of Foreign Agricultural Relations, United States Department of Agriculture.

Coordination and Effective Utilization of All Welfare and Educational Agencies Working With Rural People

This conference has considered the philosophy, approach, methods, and techniques of rural agricultural education, or extension, in the countries of the world, especially in those relatively underdeveloped.

The implementation of the suggestions made will come, if it comes at all, through adequate organization for the task. The best of paper programs can fail without proper organization, just as a well blueprinted organization can fail if it neglects the culture and the methods of communication sanctioned by the people with whom it works. Technical know-how unaccompanied by social know-how will fall far short of achieving its objectives. Such is the nature of social life. This has been demonstrated again and again in many different societies.

Even in the simplest societies there are organizations and agencies sometimes formal, often informal, sometimes governmental, often unofficial, that any educational or welfare agency such as an extension service must regard. If this is neglected, any approach by extension, no matter how worthily motivated, is bound to be taken by other agencies as a threat either to their security or their prestige.

Welfare of Rural People the Paramount Consideration

The clear implication of these facts, reiterated during this conference, is that coordination for the effective utilization of all welfare and educational agencies is of the highest importance. The Committee accepted wholeheartedly the implication of its title. The difficulties in the way of achieving coordination were recognized, but the Committee agreed on the principle that the welfare of rural people is the paramount consideration rather than agency convenience or prestige, at every level of operation from local to international.

Areas of Need Are Vast

Cooperation on the international level, especially through the United Nations and its subsidiary agencies, is relatively new. The institutions that have come into being must both find their place and feel their way. These agencies, such as the Food and Agriculture Organization, United Nations Educational, Scientific, and Cultural Organization, World Health Organization, and International Labor Organization, all are doing extension work in the broad sense of that term. They all face tremendous needs in the world as it is today. The areas of need are so vast that the problem is one of attempting to fill gaps rather than of avoiding overlapping.

The suggestion was advanced that on the international level actual collaboration rather than any formalized scheme of coordination was the proper procedure. Such collaboration can take many forms, such as exchange of information and services, joint committees and meetings, and joint operation of projects in which two or more agencies had interests. Were there time, all these could be illustrated. The implementation of such cooperation on this and other levels raises organizational and administrative questions. With these the Committee did not deal, deeming that they lay in the area of policy and therefore outside its province.

Developing Awareness of the Problem the First Step

Intergovernmental cooperation in educational and welfare work is by no means limited to the agencies of the United Nations. Neighboring peoples enter into agreements, as do nations in the same regional group. The Caribbean Commission and the Pan American Union are examples, both antedating the United Nations. Regardless of the agencies or auspices involved and wherever definite projects are contemplated, careful planning by all concerned is an essential step in attaining full utilization of all welfare and educational agencies working with the rural population concerned. No new activity should be started without raising the question as to how many other agencies should be given an opportunity cooperatively to make their contribution. Developing an awareness of the totality of any given problem among national and state agencies is the first step toward effective cooperation.

Some small and many underdeveloped nations have developed governmental structures patterned after those of larger and more developed countries. Many of their ministries live in isolation from one another. With limited resources and personnel, they are preoccupied with formulating and operating their own programs. It often happens that skillful representatives of international bodies or specialists lent by stronger governments can render great service in broadening the vision of the officials of these separate ministries by showing how coordination and collaboration can both benefit all separate agencies concerned and accrue to the great advantage of the rural people of the country receiving the advice or assistance.

Getting People To Work Together

Two things follow: First, a criterion of major importance in the selection of personnel for service in a country other than their own should be a demonstrated ability to get people to work together and the possession of a cooperative spirit. Second, the importance of continuing cooperative work after outside help is withdrawn can be provided for in the initial planning and agreements. The projects undertaken can then be used, and designed also, to help train effective, cooperatively minded personnel to implement a continuing, coordinated program. The latter consideration is especially true with respect to studies and surveys of conditions designed to guide operating programs. Unless provision is made in advance for the utilization and implementation of the findings, the net results are often negative and rural welfare and agency collaboration are alike set back. This implementation will depend on the presence of trained or trainable technicians. These are too often inadequate in number or ability, and the program, if it is to go ahead, must provide for continued, long-term collaboration between the outside group and the government.

There are also situations where the governmental structure is relatively simple. Assistance offered to such a government by another or by an international body through its own specialized agencies must not as a result even unwittingly impose its own structure. Coordination and collaboration begin at home. As one committee member put it, "Don't expand your own work by pulling it into your chest."

Utilization of All Welfare and Educational Agencies Important

The Committee was in substantial agreement that the great variety and complexity of situations faced created many problems impossible to foresee. Sometimes a specialist sent overseas in response to a call for help is frustrated because no effective agency exists through which he can work. Sometimes lack of coordination among various missions sent to a specific country severely limits the contribution of all. But on the average, such situations seldom arise in the extremes stated. The specialist can find someone to assist in his work if only he will recognize that there is a local know-how that can supplement effectively his own wider and more general sources of information. In one instance a specialist found a man who, unknown or unheeded by his government, had studied very effectively for 20 years the problem with which the specialist was concerned. The report could be very largely based on the work of this man.

So important did the Committee feel the coordinated and effective utilization of all welfare and educational agencies to be, that some of its members would have been willing to spell out the broader aspects in some detail and to suggest that in any given country there be one person in charge of all rural programs operating in that country with some outside aid, even if agencies as such should lose their identities. As these programs reached the community level, there would be a total community approach. Problems would be dealt with interrelatedly, just as Extension in some States in the United States deals with the farm home as a unit.

In the time at its disposal the Committee could no follow through on this suggestion with the necessary detail. There was, however, complete agreement that the community was crucial in any scheme of rural social and educational welfare.

The Cooperative Approach

On this local level, extension will meet some such agencies as the benevolent society, the council of elders which may have official status, the school, the mission, church, mosque, or temple, the informal family council in a community largely made up of a "great family," or, in a more simply organized society, the tribal council, perhaps with a hierarchy of chiefs.

Each of such forms of organized group life has recognition and status in the life of the people. The approval or the active cooperation of each one present in the community is essential to an effective extension program. Indeed, in some cases extension personnel can work most successfully wholly from a local organization. If more than one agency is concerned they should cooperatively approach the local community and solicit the judgment of the local people in the determination of the two or three areas that constitute the initial local program. This means in such a situation, that no one agency can hope to initiate its entire program at the beginning of an effort. But if the main objective is to contribute to the total welfare of the people of the community, such an approach will in the long run not only do more for the people but will also do more for the agencies concerned. To illustrate, the first step in introducing techniques for improved production methods might be the eradication of hookworm. The high success of the cultural missions in Mexico involving the cooperation of a number of foremost agencies in a unified approach to selected communities, is an actual case in point.

In more highly developed societies with a considerable organizational structure, the cooperative approach may itself need to be institutionalized. The pattern of organization for mobilizing all community resources in wartime may afford a model here. Governmental officer councils as developed in the 1920's in Lancaster and Kent Counties of the United Kingdom, and in some places in Canada and the United States may serve the purpose. In them the tax-supported workers consider the total needs of their area and then determine how each agency may best serve. Thus an integrated approach is achieved and any danger of overlapping effort or inter-agency competition, with the unfortunate effects upon the people, is reduced to a minimum.

In still other situations the need may be for a full-fledged community council in which the indigenous local agencies will also be included.

Criterion for Success

These community considerations are primary. The basic objective of all agencies from such international bodies as FAO, UNESCO, and WHO, through the national ministries of agriculture, education, and health to their state or provincial counterparts, is to produce improvements in the level of living of people. People live in communities; only there can they experience the results of over-all policies and programs. The criterion of the success of any program of the sort in which extension is interested is what happens on individual farms and in the homes and communities of the farmers. The weight of experience is on the cooperative approach as the most effective tool for achieving the objectives. Only thus can local people really participate and make the program theirs. The manner and type of such cooperation must, of course, be determined by the situation in each community.

By way of summary, the apparent consensus of the Committee's discussions may be put in terms of a series of propositions or principles:

1. In the agrarian world today what is called extension, broadly conceived and cooperatively conducted, is essential and, when well conducted, stimulates cooperation and coordination.
2. In assistance to an underdeveloped country, coordination on the highest level is necessary to determine the main directions of the program and the obligations, financial and otherwise, the countries concerned will assume.

3. In the field in terms of actual operation, collaboration is also essential but its forms cannot be predetermined. There are many possible methods of cooperation. The success of any one depends on the sincerity and good will of the cooperators.

4. This cooperative approach in the local community is essential among other reasons because the villager and farmer do not differentiate among official agencies. To them all are "The Government."

5. To be successful, any project must bring the local people to a recognition of their needs and build enough interest to assure their participation. Workers start where the people are, but they must not leave them there, and will not if they are real leaders.

6. To be successful, most projects must also have the help of one or more levels of government to facilitate implementation.

7. Any project of an extension nature, if successful, produces social changes that may raise new problems as they solve old ones, thus creating need for expanding programs and continuing cooperation among all concerned.

8. The extension of knowledge and technical skills demanded by the needs of the rural people of the world calls for specialists who must be broadly trained, cooperatively minded, and freed of all responsibilities save those of teaching and demonstrating in the areas of their competence.

9. Effective and successful cooperation is self-expanding. It feeds on its own success. It is not only the most economical way to achieve maximum results, it also, over the long term, pays for itself.

10. The paramount consideration in all programs of the type this conference has discussed is the welfare of the rural people in their own homes and communities.

COMMITTEE MEMBERS: Edmund deS. Brunner, Columbia University, New York, N. Y., Chairman; Elin L. Anderson, Extension Service, United States Department of Agriculture; Howard Beers, University of Kentucky, Lexington; Horace Belshaw, Food and Agriculture Organization of the United Nations; P. V. Cardon, Agricultural Research Administration, United States Department of Agriculture; Mae Cresswell, Mississippi State College, State College; J. C. Dykes, Soil Conservation Service, United States Department of Agriculture; F. F. Elliott, Bureau of Agricultural Economics, United States Department of Agriculture; Charles Hardin, Office of the Secretary, United States Department of Agriculture; Gertrude Humphreys, West Virginia University, Morgantown; E. J. Kotok, Forest Service, United States Department of Agriculture; James Maddox, American International Association, New York, N. Y.; Ross E. Moore, Office of Foreign Agricultural Relations, United States Department of Agriculture; Dillon Myer, Office of Inter-American Affairs, United States Department of State; Irwin T. Sanders, University of Kentucky, Lexington; Luke Schruben, Extension Service, United States Department of Agriculture; Don Stoops, Production and Marketing Administration, United States Department of Agriculture.

Training Needs

For People From Other Countries Coming to the United States To Learn About Extension, and for Extension Workers of the United States Going Abroad

Approximately 27,000 foreign students are now in the colleges of the United States, but less than 10 percent of them are studying agriculture. Since 1942, approximately 300 in-service trainees have been provided with training by the United States Department of Agriculture, in cooperation with the land-grant colleges and other educational organizations. In addition, 700 to 1,000 visiting agricultural scientists and technicians are aided annually by the Department in obtaining specific information related to their fields of interest. Through the facilities of the Department of Agriculture, during the last 4 years, 268 United States technicians in the field of agriculture have been sent abroad to assist in the cooperative programs in Latin America, and on special missions and assignments throughout the world. These facts are evidence that conscious attention should be given to those aspects dealing with both the technical and human problems of students, trainees, and specialists in their respective fields.

General Recommendations

1. The training program should be organized to meet the needs of the people for whom the professionals are being trained. In the field of human relations it is essential that all personnel have a general understanding of the bases of human behavior as institutionalized in different parts of the world.

2. The cultural and psychological knowledge available on specific countries should be made available to personnel assigned to those countries.

3. It is understood that training of both American and non-American extension workers will occur both in the country of the trainee concerned and in the country in which he is working. Because the nature of agricultural extension work requires that the individual worker, if he is to be effective, identify himself with farm and peasant people, and because specialized training for the professions often tempts workers to aspire to a type of social status and behavior that does not permit this identification, the importance of providing practical training in the prospective extension workers' own country is emphasized.

Specific individuals with requisite training should be designated by the respective training agencies to counsel with and advise people from other countries. This will avoid frustration on the part of foreign students.

Training for Persons Coming to the United States

Selection

1. Trainees and students should be selected on the basis of technical competence, maturity, cooperativeness, and usefulness to the country where they are to serve.

2. Ability to understand and use the English language before their arrival should be required of students and trainees.

3. They should be persons who are willing to live and work with farmers in their native country.

4. Handbooks with specific information concerning selection should be made available.

Orientation

1. Assistance in adjustment should include instruction in—

Language.
Normal social relations.
Major cultural characteristics of the United States.

Similarities and differences between these and comparable characteristics of the person's home country, and the significance of the comparison for extension work and planning should be emphasized.

Program planning

1. Where possible, the personnel of the United States Department of Agriculture, land-grant colleges, and other agencies who are familiar with the agriculture and culture in the trainees' own country should be utilized.

2. In assigning the trainee, the existing cultural characteristics of the various parts of the United States should be taken into consideration, to the end that the trainee derives the greatest benefit and satisfaction from his study in the country.

3. Assignment of the trainee should also be based upon availability of training facilities and personnel suitable to his needs.

4. Insofar as possible, all local and other extension personnel who guide students and trainees from abroad should understand the human and cultural aspects of extension work and, preferably, should have had experience in at least one culture besides their own.

5. Complete information concerning the trainee's past experience, training, and needs should be available sufficiently in advance for the official planning of his program.

Program operation

In the college, government, and other agencies involved in the training program, institutional personnel should be encouraged to acquire first-hand information as to the culture and agriculture of the countries from which the trainees and students come. It is hoped that the Fulbright[9] and other programs will be utilized to the greatest extent possible in obtaining this objective. To improve the effectiveness of training in extension, to the end that students acquire the ability to work effectively with the people of different cultures and adapt programs to local needs, it is recommended that the training program include instruction in a variety of social arrangements and channels of communication for the purpose of assisting the trainee to adjust to values and goals inherent in those relationships.

The programs of all educational agencies that are effective in changing practices and attitudes in agriculture should be studied.

Program evaluation

In appraising the extent to which the objectives of the trainee program are attained, the skills and techniques of agricultural and social scientists and others skilled in evaluation should be drawn upon.

---

[9] The Fulbright Act, P. L. 584, 79th Cong. (50 U. S. C. Suppl. V. App. 1614), authorizes the conduct of exchange-of-persons programs in cooperation with other countries and authorizes the use of local currency derived from the sale of United States surplus property abroad for such exchanges.

Training for Persons Going From the United States

All the foregoing points raised in connection with trainees coming to the United States will apply to trainees being sent abroad, with obvious modifications such as the different languages and agencies involved.

Selection

Technically qualified career people should be selected, not only on the basis of their demonstrated knowledge in their own field but also in terms of their personal ability to adapt themselves and their practices to local social and agricultural environments. When families are going abroad, the characteristics of the wife should be considered in the selection process and be given appropriate orientation.

Orientation and planning

Because of the lack of information and ineffective use of the information that is available concerning the cultures of various countries, it is recommended that social scientists be included among the scientists sent abroad with Fulbright and other funds, to accumulate and develop the necessary information for orientating extension workers who are being trained.

An understanding of the culture of the people among whom the specialist is to live and work is of prime importance. Extension is designed primarily to improve (change) existing practices. It must be realized that a change in any aspect of the life of the people will ultimately affect all aspects. Those going abroad should be shown how extension methods used in the United States are functionally related to our culture as a whole. The selection of extension methods to be introduced into other cultures must be determined by the totality of the culture to which they are to be applied. Technical briefing should include assistance from personnel familiar with the agriculture and culture in the country to which the specialist is assigned.

COMMITTEE MEMBERS: Charles Loomis, Michigan State College of Agriculture, Chairman; John Adair, Cornell University, Ithaca, N. Y.; Robert E. Adcock, Production and Marketing Administration, United States Department of Agriculture; W. A. Anderson, Cornell University; Samuel Boggs, United States Department of State; R. E. Buchanan, Iowa State College of Agriculture, Ames; Ellis B. Clough, Office of Foreign Agricultural Relations, United States Department of Agriculture; Perkins Coville, Forest Service, United States Department of Agriculture; Everett E. Edwards, Bureau of Agricultural Economics, United States Department of Agriculture; Fred P. Frutchey, Extension Service, United States Department of Agriculture; William X. Hull, Soil Conservation Service, United States Department of Agriculture; Edward A. Kennard, United States Department of State; Donald L. MacDonald, Office of Foreign Agricultural Relations, United States Department of Agriculture; Louise Stanley, Agricultural Research Administration, United States Department of Agriculture; Nathan Whetten, University of Connecticut, Storrs; Clayton E. Whipple, Office of Foreign Agricultural Relations, United States Department of Agriculture; Meredith C. Wilson, Extension Service, United States Department of Agriculture; Edna N. White, Dryden, Mich.

SUMMARY OF THE CONFERENCE

The 1949 conference was largely a follow-up of the one held in 1944 (*9*). Since the 1944 meeting was called before the end of the Second World War, it had the highly significant purpose of outlining the contributions extension methods and techniques might make in the rehabilitation of war-torn countries. That conference brought together the available information on extension methods and techniques for nine major areas of the world and analyzed past experience in extending scientific information to rural people. The proceedings of the 1944 conference were printed and widely disseminated.

Learning About Extension Methods and Techniques

Since the conference of 1944, many of the countries of the world have sent people to the United States to learn first-hand about American agricultural methods, especially as they are applied in extension work. And extension workers from the United States have, upon invitation, visited other countries and given advice and counsel in appraising the efforts of those countries to apply the findings of science to farm, home, and community problems.

An intensification of interest in extension development around the world has resulted from President Truman's inaugural address, in which he urged a bold new program for making available the benefits of science for improvement of underdeveloped areas. Since most of the underdeveloped areas of the world are primarily agrarian, the implementation of such a program will fall heavily on extension approaches. One firm conclusion came out of the conference: Extension methods and techniques, by whatever name they are called around the world, have proved the best and most effective ways to extend the findings of science. Only within the framework of education can we be sure that the fruits of science will be carried to the masses of the people and result in improved and more secure family living.

In keeping with good extension tradition, the 1949 conference provided a series of open forums on extension and related educational methods and techniques for most of the countries of the world. It stayed clear of any questions of policy or the making of recommendations. In taking this course, the conference followed a basic principle of extension education: That an early task and responsibility of the educator is to help mobilize and interpret facts, not to recommend or to make policy. The facts in this case are the more recent extension and related educational experiences around the world.

The 1949 conference discussions also were centered around extension and related educational approaches in nine regions of the world.

Extension experiences have been many and varied since the 1944 conference. In preparing a list of persons to be invited to the 1949 conference, over 300 people who have had varied world experiences in agriculture, homemaking, and youth activities were invited to attend. It is highly significant that of this number, over 200 busy people found time to come, at their own expense, to participate in the discussions and suggest educational approaches that seemed feasible for future exploration and testing. Within this group were outstanding people from the land-grant colleges and universities, including deans, extension directors, State home demonstration and 4–H Club leaders, extension supervisors, specialists, and county agricultural and home agents. These people were joined by agricultural attachés, farm-organization leaders, people from private agencies, religious leaders, people from the Food and Agriculture Organization, the Pan American Union, and people from agencies of the Federal Government, including representatives of the two sponsoring agencies.

Science and Folk Knowledge

M. L. Wilson, Director of Extension Work, N. E. Dodd, Director General of the Food and Agriculture Organization, and Fred J. Rossiter, Associate Director of the Office of Foreign Agricultural Relations, all emphasized that technical assistance in any field, and particularly in agriculture and homemaking, was of little use to any country of the world unless some method for extending the new knowledge accompanied it. Raymond Miller of FAO also placed emphasis upon this point in his discussion of cooperatives in Asia at one of the conference luncheons. Though the regional committees dealt with widely different cultures, one factor that seems common to all the reports is, that at present a gap exists between science or technical knowledge coming out of scientific research and the folk or common knowledge of the people. In general, adequate social institutions with experienced staffs are lacking in most of the countries of the world to carry the findings of science to the common man of the underprivileged areas.

A careful examination of the committee reports, particularly the more precise analysis of extension in a given country, emphasizes the wide range of educational methods and techniques now being followed by the various countries of the world. Over and over again people were heard to say that they were impressed by the importance of adapting educational methods to fit the peculiar situation of each country. This conference brought into focus the fact that many of the countries are now doing a great deal in the field of extension education. Though most of them want to learn and to improve what they are doing, they also have much to offer. Through this interchange of experiences, the extension workers from the United States gained as much in understanding as they gave. For those who would go into any other country to counsel and assist in the development of educational approaches, this conference would say, "Pay close attention to the basic principle in education—understand what is now being done, and start with the people where they are." This is so important that it needs to be emphasized.

The Conference Committee on the Social Sciences in Relation to Extension Work emphasized that anyone approaching the task of extension education in a country that is foreign to him must early orient himself to the top administrative policymaking and supervisory personnel of that country. It also emphasized the importance of equal orientation and understanding to farm and rural people the program is eventually to serve. The report stressed that for each group there were deep-seated attitudes, traditions, and ways of doing things that must be understood. In speaking of the importance of understanding traditions, Horace Belshaw of FAO said it is as unwise to ignore folk practices as it is to ignore the power of science.

Change in Philosophy

Though change is expected to occur through extension, change in philosophy and point of view about the role of education must of necessity come from those who formulate policy and give direction to the conduct and organization of the program. Many attending the conference concluded that altogether too frequently in the past, people who have gone abroad have come home frustrated because they could not, within the time limits of their assignment, gain acceptance and obtain action from the top people on a given program. R. K. Kerkham, a senior agricultural officer of the Government of Uganda, drove home a significant point when he said that in Uganda it took 3 years for an agricultural officer to render effective service. During this time, a person must orient himself to the new culture and learn from the bottom up, as well as from the top down, how best to approach the job of education. Throughout the committee deliberations, this point was emphasized over and over again. Much discussion and criticism were leveled at the present tendency to send people abroad on short missions and expect them to make a significant contribution in the development of a program tailored to the country's needs.

As was true of the conference in 1944, the committee discussions this time reemphasized what M. L. Wilson, Director of Extension Work, has been saying about extension. It is informal, away-from-school education, and, being informal, it emphasizes and employs many different methods. In discussing the Rockefeller Foundation Survey of Crete, Leland G. Allbaugh, Associate Director for the Social Sciences, Rockefeller Foundation, said that any person going to Crete in the capacity of an extension worker would want to recognize that the coffee house is important as a gathering place from which to disseminate information. This conference would conclude that when we talk about extension and related educational approaches for other countries, a wise approach would be to start by considering ways of inducing and introducing change, and leaving for later discussion and review the organization or formal system for administering the program. Throughout the week, the illustrations used both by the speakers and by those in committees, made clear that we tend to talk a universal language when we speak about basic education and extension principles in working with people. Our differences come into focus when we talk about what kind of agencies and organizations are needed to direct the educational activities and the formation of policies to carry out the educational work.

Extension, wherever it is found, has as its objective the initiation and direction of change and the bringing about of improvement, be it in farm and home practices and attitudes or in community programs and activities. This was emphasized throughout the conference in many different ways. In talking about the role of extension workers in the many countries of the world, emphasis was placed on their being free of regulatory and governmental supervisory functions. The conference would say an extension worker must be free to create interest and formulate attitudes on the part of the people to want to do things for themselves because they become convinced of the importance of these things and see how they will result in improved practices and aid their personal security. Experience has shown that this can best be done when the worker is clearly recognized as an educator.

Speaking of the past, we note that extension experiences around the world are far more prevalent in the field of agriculture than in either the field of homemaking or of youth. In the conference of 1944, it was with real difficulty that we were able to find a few people who could make a contribution in the field of extension homemaking. Although more attention has been focused on extension homemaking around the world in recent years, a review of committee deliberations makes clear that this phase of extension education is still much retarded. This also is true of youth work. The discussions of the conference suggested that if the underdeveloped areas of the world are to be aided in improving their standards of living, the farm and home approach must be given greater emphasis. It would also seem clear in the long-range view that strong youth programs would be called for. Since the participants in this conference universally agreed on the importance of increased extension emphasis on homemaking, a group of women who participated in the committee deliberations were asked to formulate a supplementary statement on the urgency of giving strong emphasis to the home and to homemaking in any program for aid in the less developed areas of the world.

Desirability of Slow Changes in Practices

A warning was given to all people who would accept foreign assignments to go slowly in deciding that some practice should be changed merely because it did not seem to make sense. In the conference it was illustrated again and again that what may not make sense to the individual working in a foreign culture, in all probability makes good sense to the people of that culture. Furthermore, a careful examination of practices will reveal circumstances of the past that have given sanction and support to those practices. Several people in this conference said it was important that a new worker stop to analyze the practice. Such analysis may reveal that to change it may or may not be for the best.

Edward A. Kennard of the United States Department of State said that an extension worker going abroad needs to analyze situations from at least two points of view—his own and the other fellow's. He should know how to analyze the situation he is facing so that he can best know what to do and how and when to do it. This "sizing up" of the situation is more complicated than one tends to assume. The definition of the situation by the worker who is put into a new culture may be, that what is needed is to get the people to adapt and adopt many of the tried and proved practices and methods of the country from which the worker comes. The native worker may interpret the situation so differently that he may conclude the new worker has little or no appreciation of the country's practices and methods—and he may be right.

I. O. Schaub, Director of Extension at North Carolina State College of Agriculture, clearly illustrated this problem when he said the Germans had many practices that adequately fit their needs, but to an unoriented outsider they might look outdated. One had only to sit in on the committee deliberations to see how differently people from various countries viewed the problems of a region and the suggestions made for improvement. Director Schaub forcefully illustrated the importance of understanding a people's value system. In discussing social values, the Committee on Social Science in Relation to Extension Work stated that to know and understand the values of the people was basic and a prerequisite to the development of any program. In one committee discussion, a group was heard to conclude that values were the primary motivating forces within a culture. They were saying that any program for improvement must be so ordered as to be convincing to the people for which it is intended and thus make their values seem more secure to them.

Alexander Leighton of Cornell University, when he took part in the Social Sciences Committee deliberations, emphasized that the people most in need of help might, and probably would, be the least willing to accept change, for change would itself present those families with renewed insecurity. Their present security, he said, was in the traditions of the people. In this connection, Mr. Kerkham's experiences and the experiences of members of private agencies, of agricultural missionaries, and of Spencer Hatch and Ralph H. Allee of the Inter-American Institute of Agricultural Sciences at Turrialba, Costa Rica, strongly indicate that helping the people in the vast underdeveloped areas of the world will be a long, slow task. Though there would be need for orientation and help from the top, the success of the program will, in large part, be dependent upon the approaches made to the people, on the way their traditional patterns of organization and leadership are used, and on the new securities the people will realize from the change. Ide P. Trotter, Dean of the Graduate School, Texas Agricultural and Mechanical College, reinforced this point in his informal illustrated talk on extension in foreign countries. He emphasized that the program must be local in contrast to an administratively developed program from the top and handed down.

The forthright statement of Raymond Miller of FAO that straight technological assistance was not enough in helping to meet the problems and needs of the underdeveloped areas of the world was reinforced by most, if not all, committee deliberations. The successful demonstrations of the agricultural missionaries throughout the world bear testimony to the generalization that it is the total man encompassing his spiritual, social, and material needs who must be included in any substantial program for self-help. Dr. Belshaw of FAO reemphasized this point when he said that for many sections of the world, the best guarantee of getting increased agricultural production was the development of a basic health program. He stressed the point that a sick man has few interests and responds to limited stimuli. One would hope that in the assembly of future missions, increased attention will be given to placing on those missions competent social scientists and home economists, and that their charge will be to look at man in his relation to his total environment rather than to one specific segment to which technology is related.

Private agencies continue to play an important role in pioneering and in demonstrating extension methods around the world. Because of their substantial contribution to extension development in the past and the clearly recognized challenge ahead, a committee was set up to review recent extension experiences by the private agencies and to suggest how they may function even more effectively in the future.

Some Major Rural Problems

The conference emphasized that all people, wherever they are, have basic needs for food, clothing, shelter, emotional response from others, and security. The similarity in major farm, home, and community problems for each of the countries of the world discussed in this conference was impressive. To illustrate, those discussed by the Committee for the Middle East and by the Committee on Latin America follow:

Problems considered by the Committee on the Middle East

1. Population growth in relation to cultivated and crop areas.
2. Land tenure and land distribution.
3. Problem of monoculture—dependence upon one cash crop.
4. Lack of adequate educational facilities for rural folk, including the subproblems of literacy, adult education, and agricultural training at all levels.
5. Tribal settlement.
6. Cooperative organization.
7. Farm credit.
8. Various health and sanitation problems, including housing, nutrition, and disease control.
9. The application of modern techniques to agricultural production, in relation to problems concerning farm machinery, pest control, and soil conservation.
10. The development of effective systems of extension to bridge the great gap that exists in the Middle East between technical and scientific authorities on the one hand, and the large peasant masses on the other.

Problems considered by the Committee on Latin America

1. Farm problems.
    a. Land use:
        Soil and water conservation.
        Maintenance of fertility of the land.
        Varieties of crops and pastures, forages, and concentrates.
        Pest and disease control.
        Cultural practices.
        Diversification.

  - b. Quality and care of livestock and poultry in relation to—
    - Inherent ability to produce.
    - Disease and parasite control.
  - c. Tools and equipment both as to kinds adapted to specific situations and as to availability.
  - d. Farm power: Horses, mules, and oxen; harness, wagons, and other light equipment.
  - e. Improved care of dairy cows and their products.
- 2. Home problems:
  - a. Diets in relation to content and preparation.
  - b. Houses—space, air and light, floors, chimney, cooking facilities, utensils, beds, insect and vermin control, rodent control. Insufficient home-produced foods.
  - c. Waste disposal, latrines.
  - d. Safe water.
  - e. Spare-time industries.
- 3. Community problems:
  - a. Sanitation: Water supply, waste disposal, insect control.
  - b. Marketing facilities: Safe storage, market preparation, outlets.
  - c. Credit, emphasizing education for its use.
  - d. Purchasing power of farm products.
  - e. Reclamation and development of land.
  - f. Effectiveness of rural workers:
    - Security of tenure.
    - Inadequate training.
    - Part-time employment.
    - Willingness to sacrifice for the job.
  - g. Organization and facilities for recreation: Play and reading materials.
  - h. Reliable and valid information:
    - Availability of world knowledge.
    - Means for obtaining information, research.
    - Means for using findings in operating programs.
  - i. Effective group action on road construction and repair, water systems, sanitation, cooperatives, recreation, and land use regulations.
  - j. Cooperation with health authorities.

Possible Approaches to Problems

In talking about essential steps in national agricultural improvement, Ralph W. Phillips of FAO reminded us of the importance of careful delineation of the essential problems and the necessity for an integrated approach. These points were also stressed by the committees when they discussed possible approaches to the vast array of problems for the countries under consideration. Emphasis was placed on necessity for early enlistment of the institutional and agency resources available and for finding ways and means of bringing them into close working relationship. Since the underdeveloped areas of the world are most limited in resources, it was emphasized as both urgent and wise to mobilize, coordinate, and effectively utilize all available resources. Because of the importance of this problem, a special committee on coordination and effective utilization of resources was asked to outline some basic principles of coordination.

This conference has repeatedly pointed out that one of the great problems facing many of the countries of the world that have an interest in developing an adequate extension system, is limited personnel. In general, the technically trained people in most countries come from an urban background. They have limited contacts with rural problems and for the most part are limited in training in the social sciences and education. Few possess a philosophy of service to the common man. In making these statements, committee members were humble in saying they did not want to be misunderstood. They wanted only to point out the problems yet to be solved before channels of communication from the top down could be opened and freely used in extending scientific information to the masses.

Requests to the United States Department of Agriculture and the land-grant colleges for help in training people from other countries in extension approaches are constantly increasing. Because of this urgent need, a special committee on personnel training was set up to consider this problem.

On behalf of the two sponsoring agencies, we express our deep gratitude to the committee chairmen and cochairmen for their untiring efforts, and to the other members of the Steering Committee who worked so faithfully in planning and directing this conference. Without the faithful work and contribution of all members of the committees, the conference would not have succeeded.

DOUGLAS ENSMINGER,
Chairman.
Conference Over-All Committee.

Literature Cited

(1) BRUNNER, EDMUND DES.; SANDERS, IRWIN T.; AND ENSMINGER, DOUGLAS, EDS.

1945. FARMERS OF THE WORLD. xiii and 208 pp. New York. Columbia University Press.

(a) Chapter 5: YANG, HSIN PAO. PROMOTING COOPERATIVE AGRICULTURAL EXTENSION SERVICE IN CHINA. pp. 46–60.

(b) Chapter 7: TANNOUS, AFIF I. EXTENSION WORK AMONG THE ARAB FELLAHIN. pp. 78–100.

(2) CONANT, JAMES B.

1948. THE ROLE OF SCIENCE IN OUR UNIQUE SOCIETY. Science, v. 107, No. 2769, pp. 80 and 81.

(3) COUNCIL OF ADULT EDUCATION.

1947. FURTHER EDUCATION FOR ADULTS. 118 pp. Wellington, N. Z.

(4) LEONARD, OLEN E.

1949. LOCALITY GROUP STRUCTURE IN BOLIVIA. Rural Sociology, v. 14, No. 3, pp. 250–60.

(5) LINTON, RALPH.

1936. THE STUDY OF MAN. New York, London. 503 pp. (See pp. 348–55.)

(6) ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.

1950. AGRICULTURAL ADVISORY SERVICES IN EUROPEAN COUNTRIES. Report of a working party of experts. 232 pp. [and supplement]. Paris. OEEC.

(7) SIMEY, T. S.

1946. WELFARE AND PLANNING IN THE WEST INDIES. 267 pp. Oxford.

(8) THOMPSON, A. B.

1945. ADULT EDUCATION IN NEW ZEALAND. 378 pp. Res. Ser. No. 22. Wellington, N. Z. Council for Educational Research.

(9) UNITED STATES DEPARTMENT OF AGRICULTURE, EXTENSION SERVICE AND OFFICE OF FOREIGN AGRICULTURAL RELATIONS.

1945. CONFERENCE REPORT ON THE CONTRIBUTION OF EXTENSION METHODS AND TECHNIQUES TOWARD THE REHABILITATION OF WAR-TORN COUNTRIES. Washington, D. C., September 19–22, 1944. v and 239 pp.

(10) WHETTEN, NATHAN L.

1948. RURAL MEXICO. Chicago. 671 pp. (See pp. 404–53.)

(11) YANG, MARTIN C.

1945. A CHINESE VILLAGE: TAITOU, SHANTUNG PROVINCE. 275 pp. New York. (See chapter 7, pp. 73-85.)